ARCHITECTURAL RECORD

HOUSES

SEPTEMBER 1949

SEAM SEALER for a CONCRETE APRON . . .

This is only one of the many uses you'll find for Flintseal*. . . in and around your plant

Get this lasting "rain loss insurance" for your plant. Protect your property against the damage done by moisture and other foreign matter infiltrating through the joints in concrete.

Driveways . . . aprons . . . loading ramps and platforms . . . paved floors . . . roof parapets . . . concrete storage vats . . . foundations . . . these are only a few of the many spots where Flintseal can give you the thorough-going protection you need.

This hot-poured, rubber-bearing, joint sealing compound makes a positive bond with concrete . . . and eliminates the necessity for frequent replacement of ordinary unsatisfactory fillers.

Why? Because Flintseal adheres firmly to concrete without the use of primers. It maintains resilience . . . will not crack in cold weather or flow when it's hot. It remains extensible and compressible throughout repeated cycles of expansion and contraction of concrete slabs.

And Flintseal is quick and easy to apply, in equipment especially designed to melt and maintain it at proper pouring temperatures, and give you a smooth, neat joint.

Use the coupon to get complete information on Flintseal and other Flintkote Products for Industry.

FLINTKOTE
Products for Industry

Atlanta • Boston
Chicago Heights
Detroit • Los Angeles
New Orleans
Washington
Toronto • Montreal

IN ADDITION TO FLINTSEAL
FLINTKOTE MAKES OTHER PRODUCTS FOR RESISTANCE TO WATER AND DAMPNESS

Industrial Asphalt Emulsions • Cutback Asphalt Primers and Coatings • "Hydralt®" Protective Coatings • Asphalt Saturated Membrane • Asphalt Mastics and Semi-Mastics • Asphalt Base Aluminum Paint • Spandrel Cloth

®REG. U. S. PAT. OFF.

THE FLINTKOTE COMPANY, *Industrial Products Division*
30 Rockefeller Plaza, New York 20, N. Y.

Gentlemen:
Please send me information on the following:
☐ Flintseal ☐ Protective Coatings

NAME_____
ADDRESS_____
CITY_____ ZONE____ STATE_____ AR 9-49

ARCHITECTURAL RECORD (Vol. 106, No. 3, September, 1949) is published monthly by F. W. Dodge Corp., 10 Ferry Street, Concord, N. H., with editorial and executive offices at 119 W. 40th St., New York 18, N. Y. $4.50 per year; Foreign, $6.50.
(Regular Edition)

Entered as second-class matter at the Post Office, Concord, N. H., March 16 ,1946, under the Act of March 3, 1879.

Vol. 106 · No. 3 September 1949

ARCHITECTURAL RECORD

Copyright 1949 by F. W. DODGE CORPORATION, with all rights reserved • Publishing Director, Magazine Division, H. Judd Payne • **EDITORS:** Editor-in-Chief: Harold D. Hauf, A.I.A., A.S.C.E.; Managing Editor, Emerson Goble; Associate Editors, Robert E. Fischer, Florence A. van Wyck; Washington News, Ernest Mickel; Contributing Editor, Arthur McK. Stires; Western Editor, Elisabeth Kendall Thompson; Special Editorial Representative, Western Section, William C. Rodd; Associate in South America, Edmund J. Whiting, A.I.A.; Editorial Assistants, Jeanne Davern, Cornelia Reagan • **ART DEPARTMENT:** Myron S. Hall, 3rd, Director; Frances Torbert, Assistant; Sigman-Ward, Drafting • **CONSULTANTS:** Chairman, Editorial Board, Kenneth Kingsley Stowell, A.I.A.; Industry Relations Consultant, Thomas S. Holden; Statistical Consultant, Clyde Shute; Building Economics Consultant Norbert Brown; Field Research Consultant, Clifford Dunnels, Jr.

Architectural Record (combined with American Architect and Architecture) is published monthly by F. W. Dodge Corporation, 10 Ferry St., Concord, N. H., with Editorial and Executive Offices at 119 West 40th Street, New York, N. Y. Western Editorial Office, 2813 Channing Way, Berkeley, Calif. Thomas S. Holden, Pres.; Howard J. Barringer, Vice-Pres. and Treas.; Irving W. Hadsell, Vice-Pres.; Chauncy L. Williams, Vice-Pres.; Sanford D. Stockton, Jr., Secy.; Walter F. De Saix, Asst. Treas.; Edwin H. Freed, Asst. Treas. Member Audit Bureau of Circulation and Associated Business Papers, Inc. Architectural Record is indexed in Reader's Guide, Art Index, Industrial Arts Index and Engineering Index. Subscription rates: United States and Possessions, Canada, Cuba, Mexico, Central and South America, and Spain, $4.50 the year, $7.50 for two years, $9 for three years; elsewhere, $6.50 the year, $11.50 for two years, $15 for three years. Single copy $1. Circulation Manager: Marshall T. Ginn. Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage. Other Dodge Services: Real Estate Record & Builders' Guide, Sweet's Files, Home Owners' Catalogs, Dodge Reports & Dodge Statistical Research Service.

HAROLD D. HAUF, A.I.A., A.S.C.E., BECOMES EDITOR-IN-CHIEF . . . 87

BUILDING TYPES STUDY NO. 153 . . . HOUSES . . . 88
Prepared under the Editorial Direction of Arthur McK. Stires

THE CASE FOR THE CLIENT . . . 88

PROJECTS

Residence for Mr. and Mrs. Harry Holt, Stockton, Calif. Joseph Esherick, Architect . . . 92

House in Phoenix, Ariz. Blaine Drake, Architect and Owner . . . 98

House for Mr. and Mrs. Sinay, Beverly Hills, Calif. Richard J. Neutra, Architect . . . 102

House in Spokane, Wash. E. J. Peterson, Architect and Owner . . . 105

Residence in Haddonfield, N. J. George Daub, Architect . . . 108

Model House in Seattle, Wash. Lawrence & Hazen, Architects . . . 112

Residence for Mr. Benjamin Goldwasser, Mamaroneck, N. Y. Caleb Hornbostel, Architect . . . 114

House in Berkeley, Calif. Roger Lee, Architect and Owner . . . 116

DOMESTIC ARCHITECTURE OF THE SAN FRANCISCO BAY AREA . . . 119
Exhibition of the San Francisco Museum of Art

THE SOVIET ARCHITECTURE PURGE . . . 127
By Peter Blake

STUDIES IN PLANNING TEXTURE . . . 130
For Housing in a Greenbelt Town. By Elbert Peets

RECREATION CENTER FOR SAN FRANCISCO'S CHINESE POPULATION . . . 138
William Gladstone Merchant, Architect

ARCHITECTURAL ENGINEERING . . . Technical News and Research . . . 142

DESIGNING FOR DAYLIGHT WITH CLERESTORY WINDOWS . . . 142
By Bernard F. Greene

TIME-SAVER STANDARDS . . . Heating Systems for Houses . . . 146
Part II: One-Pipe Forced Hot Water Systems. By William J. McGuinness

PRODUCTS . . . for Better Building . . . 150

MANUFACTURERS' LITERATURE . . . 156

THE RECORD REPORTS . . . News from the Field . . . 7

CONSTRUCTION COST INDEXES . . . 26

REQUIRED READING . . . 28

NEWS FROM CANADA . . . By John Caulfield Smith . . . 172

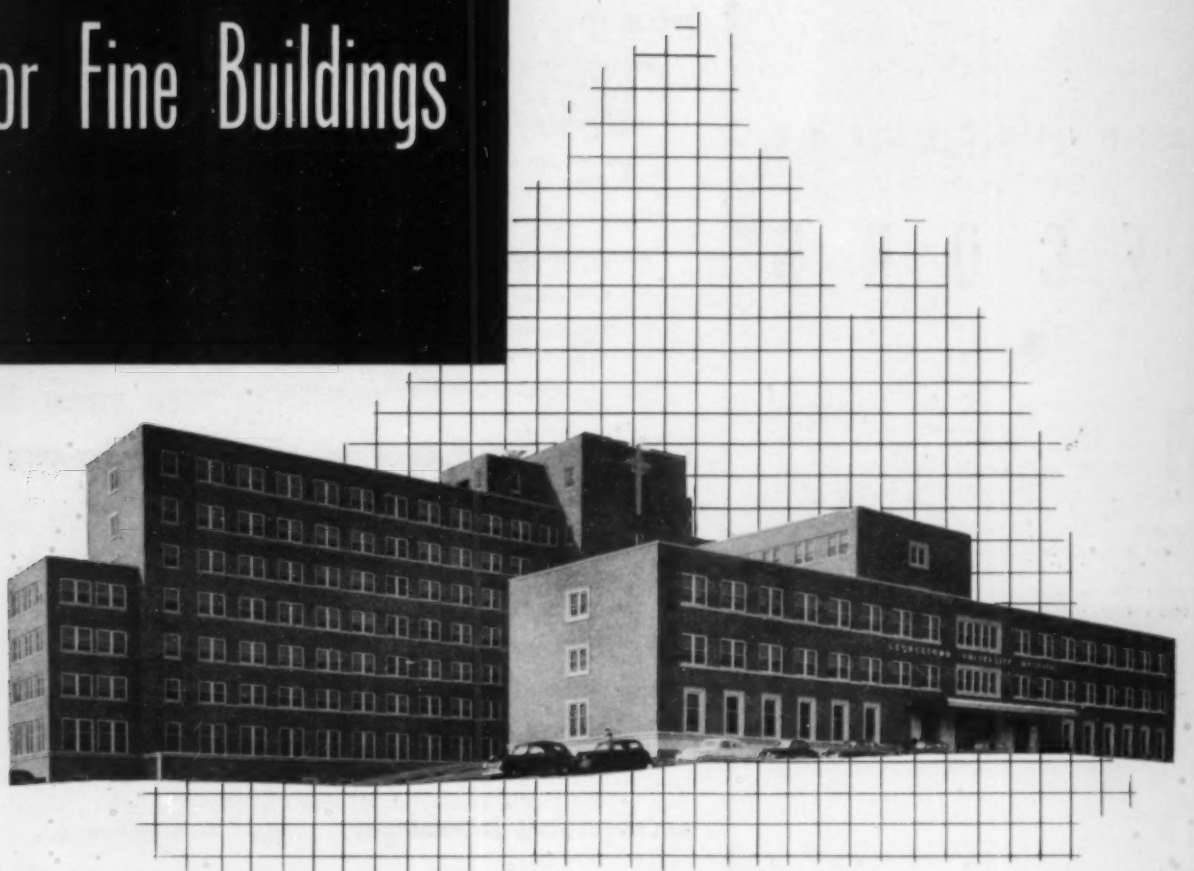
EMPLOYMENT OPPORTUNITIES . . . 206

INDEX TO ADVERTISEMENTS . . . 228

COVER: Holt House, Stockton, Calif.; Joseph Esherick, Architect.
Photograph by Roger Sturtevant

Fine Flush Valves for Fine Buildings

For complete information on Watrous Flush Valves see our catalog in Sweet's.

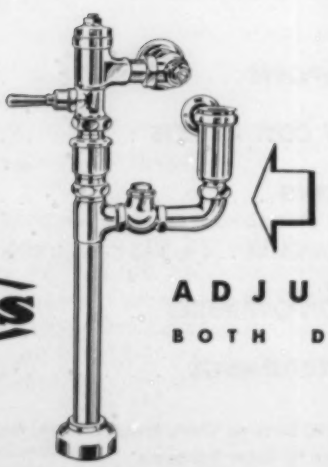


GEORGETOWN UNIVERSITY HOSPITAL

Washington, D. C., one of the many fine buildings equipped with Watrous Flush Valves.

KAISER, NEIL & READ
Architects

THE STANDARD ENGINEERING CO.
Plumbing Contractors



This new Watrous Flush Valve Combination for hospitals, included in above installation, is especially adapted for bedpan cleansers. Eliminates need for special type bowls.

Watrous

ADJUSTABLE FLUSH VALVES

BOTH DIAPHRAGM AND PISTON TYPES

THE IMPERIAL BRASS MANUFACTURING COMPANY
1240 W. Harrison Street, Chicago 7, Illinois

THE RECORD REPORTS

Larson, GSA Head, Advocates Preparedness for Public Works Need Rather Than Building Now; States Preparing Applications for HHFA Funds

The balance between private and public construction volume in relation to the nation's economic health is being given more attention than at any time since depression days. As the feverish postwar charts showed signs of cooling down a bit, public officials and Congress discussed with new zeal the need for planned public construction. More planned public works, they said, should be made ready and shelved in a stand-by position to fill in the gap if private building really hits the skids for a serious downward trek.

In this renewal of a not-too-old philosophy, Jess Larson, plain spoken head of the newly created General Services Administration, became an Administration spokesman. Larson took over the duties of Federal Works Administrator Philip B. Fleming when the latter was transferred to the Maritime Commission. He soon thereafter found himself in an entirely new role as chief of G.S.A. operations which combined Federal Works with Federal Bureau of Supply, Archives and other agencies.

Larson's first statement on the subject made it clear he is not going to thump for an accelerated works program now. He advocates instead a large and adequate shelf of plans, fully blueprinted and available for immediate contracting. He does not tie this exclusively to depression use. In his words:

"Because of the great backlog of needs for public works and the present greater availability of materials, communities should schedule public works on a most-needed, first-built basis. An adequate shelf of completed blueprints would permit a more orderly progression of public construction."

As private construction activities have been emphasized, and rightly so, public construction has been neglected. That is Larson's view in a nutshell. The widely accepted estimate of $100 billion as the 15-year public construction need firmly backs this stand. Private new construction volume jumped from $3.8 billion in 1939 to $14.6 billion in 1948 — 282 per cent. Public construction increased from $2.5 billion in 1939 to $4.2 billion in 1948 — 69 per cent.

Another Larson statistic says that public construction accounted for almost one-third of the total of new work in the decades of the 1920's and 1930's. Yet, in 1948, it was only 22 per cent. Convincing argument, it appears, for giving new attention to public construction as a valid component of the whole national economy.

Congress Takes a Look

Shortly after President Truman made his mid-year economic report to Congress, the expected attention to public works matters developed. Both House and Senate committees got busy on bills that had been gathering dust. A month ago committee-approved bills (identical in nature) were reported out. The Senate's reached the calendar and the other hoped to hurdle the Rules committee and get to the floor for fast action before adjournment.

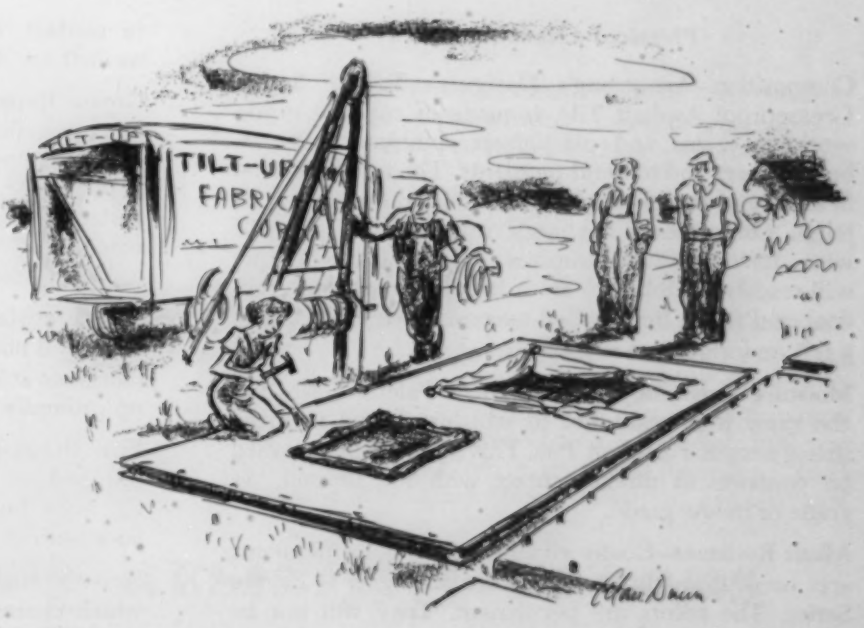
The plan would reactivate the Bureau of Community Facilities interest-free loan program, would once more put the states and their local agents in the business of preparing public works plans and specifications with borrowed federal funds. It was evident beyond doubt that threats of a sagging economy were prodding these attempts at hasty renewal of the B.C.F. activities. These current measures that had cleared committee provided $100 million in an authorized amount and would spread the program over two years. Appropriations would have to be approved later before any money could be loaned. The purpose was plainly stated — to encourage states and local communities to "maintain a continuing and adequate reserve of fully planned public works (exclusive of housing)." Drafters of the legislation made certain these plans would be available and ready to translate into construction activity rapidly. Point is, to be effective they would have to be in final form.

A More Constructive Program

Advocates of more planned non-federal public works want no more "made work" programs of the PWA variety. They recall the pick and shovel gangs of the 30's and say they contributed nothing of permanent benefit as would the store of public works plans integrated in each instance with the local overall civic development.

Rep. Hale Boggs (D-La.), who introduced the first advance planning bill of the 81st Congress, said he wanted the country to avoid its past mistake of not being prepared with a fat shelf of plans and specifications. The House public works committee listened while Jess Larson described the tendency of made work programs to "undermine morale" of American communities. Larson warned

(*Continued on page 10*)

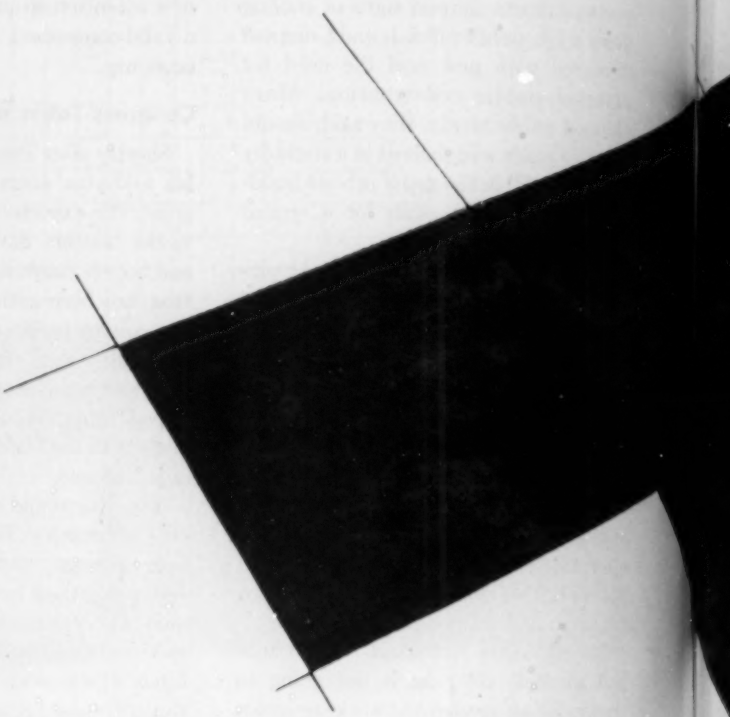


— Drawn for the RECORD by Alan Dunn

Armstrong's New

DESIGNER'S PALETTE

Greaseproof Asphalt Tile



The Designer's Palette Series in Armstrong's Greaseproof Asphalt Tile provides unusual beauty and high styling in a low-cost greaseproof and alkali-resistant flooring. The muted colorings in the series are a departure from the contrasting marbleization normally associated with asphalt tile.

Architects and designers will find unusual decorative advantages in the soft, pastel coloring that characterize Armstrong's new Designer's Palette Series. Each pattern in the series is obtained from close value tones of the same color. The richness of these colors is obtained by Armstrong's exclusive nondirectional swirl graining.

Armstrong's Designer's Palette Series provides a desirable monochromatic effect in a floor. However, the subtle variations in tone help to conceal footprints and marks on the floor.

The eleven colors in the Designer's Palette Series have been created by Armstrong's floor stylists for wide decorative possibilities. They are harmonized to allow any of the colors to be combined in a pleasing effect. The broad range of colors from white to dark walnut meets any requirement for light reflectivity.

Physical Characteristics

Composition—Armstrong's Designer's Palette Series, Greaseproof Asphalt Tile, is made of superior grade synthetic resins and plasticizers combined with asbestos fibers and mineral pigments. The toughness and flexibility of the product give it unusual durability. Its tough composition has high resistance to abrasive wear. Its flexibility minimizes cracking. This flooring will readily conform to minor irregularities in the subfloor and it can be installed over wood subfloors when a felt underlayment is used.

Moisture Resistant—The Designer's Palette Series has the same high resistance to moisture found in Armstrong's regular Asphalt Tile. This floor can be installed on concrete in direct contact with the ground, on grade or below grade.

Alkali Resistant—Costly alkali-resistant color pigments are used throughout the entire Designer's Palette Series. The colors are permanent. They will not be affected by alkali rising through concrete subfloors in contact with the ground, and they will not be washed out by harsh alkaline cleaning solutions.

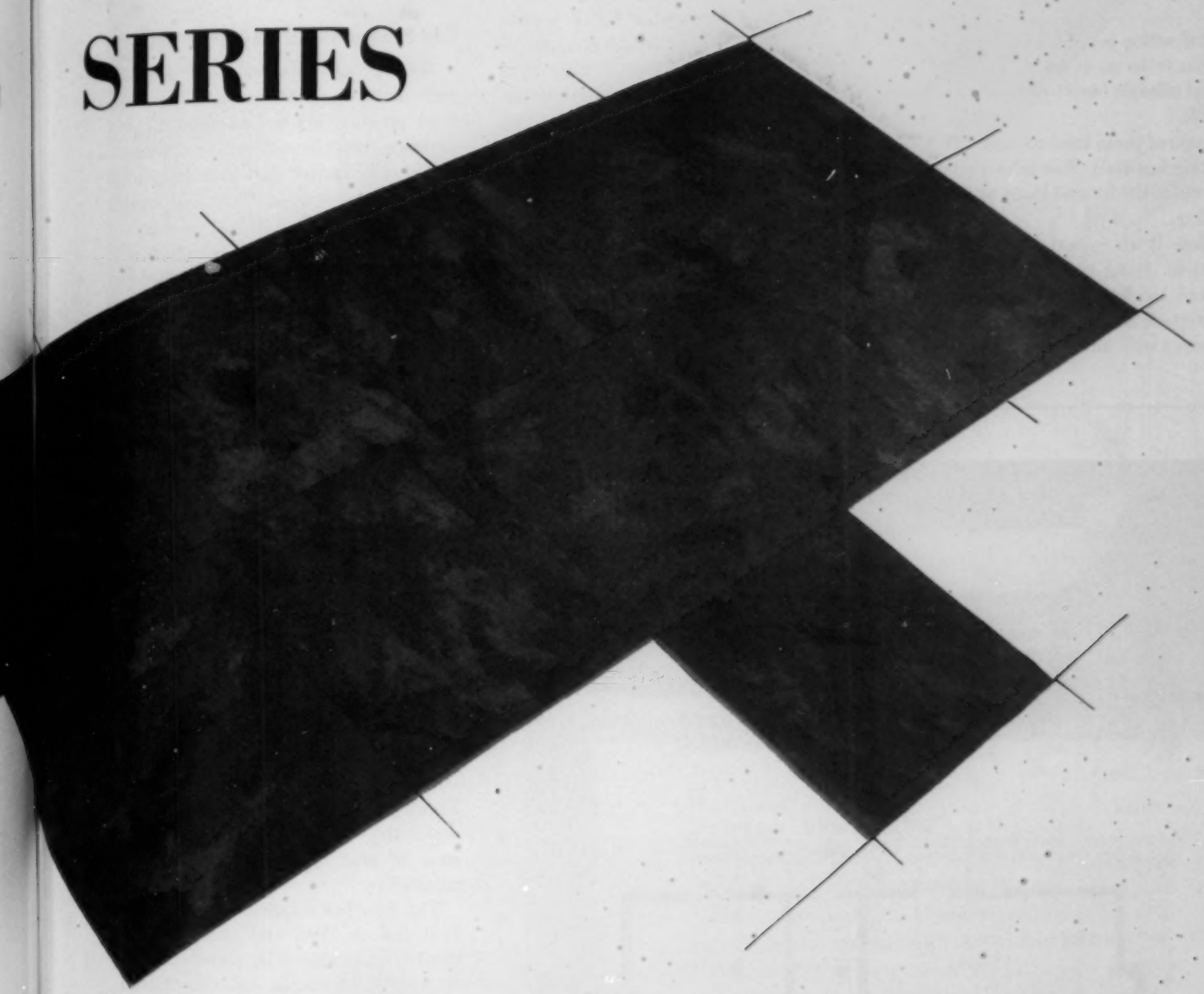
Grease Resistant—Lubricating oils and greases, gasoline, and cooking fats and oils have no harmful effect on Armstrong's Designer's Palette Series, Greaseproof Asphalt Tile. This flooring is ideally suited for use in restaurants, kitchens, butcher shops, filling station offices and waiting rooms, or wherever grease or oil may be spilled or tracked over the floor.

Acid Resistant—Organic acids and dilute inorganic acids will not deteriorate this floor. Even concentrated inorganic acids have no immediate effect. When wiped up promptly they will not leave any disfiguring marks.

Fire Resistant—Cigarette stubs and lighted matches dropped on this floor will not cause it to flame. Cigarette burns can be removed easily by buffing the floor with steel wool.

Smooth Surface—The exceptionally smooth surface which characterizes the Designer's Palette Series will not hold dust and dirt. The sharp corners and true

SERIES



square edges of each tile allow them to be fitted together snugly. This eliminates dirt-catching joints between the tile. Routine sweeping with a hair broom is all the regular attention this floor requires. Occasional washing and waxing keep it looking new.

Sizes and Gauges—Armstrong's Designer's Palette Series is available in 9″ x 9″ size. Gauges are ⅛″ and 3/16″.

The subtle coloring and rich beauty of Armstrong's Designer's Palette Series make it an excellent flooring choice for fine stores, offices, and public buildings that require dignified styling, and also for homes. The Designer's Palette Series will be particularly favored for high-style commercial and residential buildings constructed without basements. Most other types of resilient floors are not recommended for such construction because of the alkaline moisture conditions in concrete subfloors in direct contact with the ground.

Armstrong's Designer's Palette Series, Greaseproof Asphalt Tile, costs no more than the regular line of Armstrong's Greaseproof Asphalt Tile. Thus, it can be used for high-style floors at a modest cost.

Installation specifications for the Designer's Palette Series are exactly the same as for regular Armstrong's Asphalt Tile. For additional information about Armstrong's Designer's Palette Series, Greaseproof Asphalt Tile, architects are invited to get in touch with any Armstrong district office or write Armstrong Cork Company, 2409 State Street, Lancaster, Pennsylvania.

ARMSTRONG'S RESILIENT FLOORS

LINOLEUM • LINOTILE • ASPHALT TILE | RUBBER TILE • CORK TILE • CORLON TILE

THE RECORD REPORTS

(*Continued from page 7*)

that if action is not taken in time, cities will have to go to made work because "'local officials have to take care of their people."

Some of these local officials have been visiting Larson's office asking when federal aid in the form of loans will be forthcoming.

Time is an important aspect of the problem. Bond issues have to be considered locally before construction can be started; but not before plans can be prepared with money borrowed from the federal treasury. Larson made the point that earlier planning permits city governments to know more accurately what their final construction costs will be.

The idea of renewing B.C.F.'s principle function came through committees with a minimum of objection. Rep. Dondero (R-Mich.), while admitting the objective was laudable, thought interest should be charged the loan recipients. "There isn't a state that will get a loan under this bill that isn't better off (financially) than the federal government," was one of his comments in the hearing.

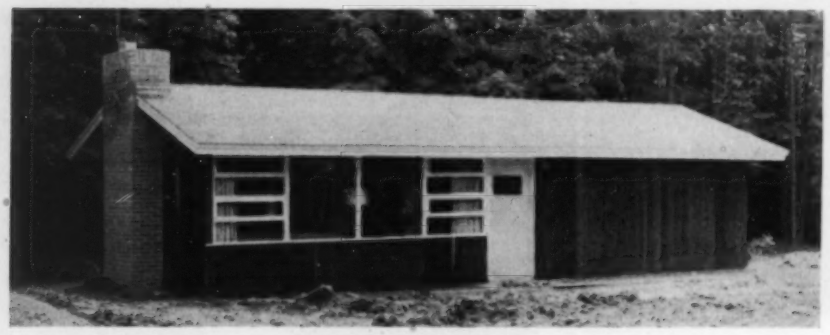
Larson had an answer for the no-interest questions. This bill, he said, is an incentive to states to build a shelf of non-federal public works plans. The burden of interest payments would mean that many of them would be left out of the program.

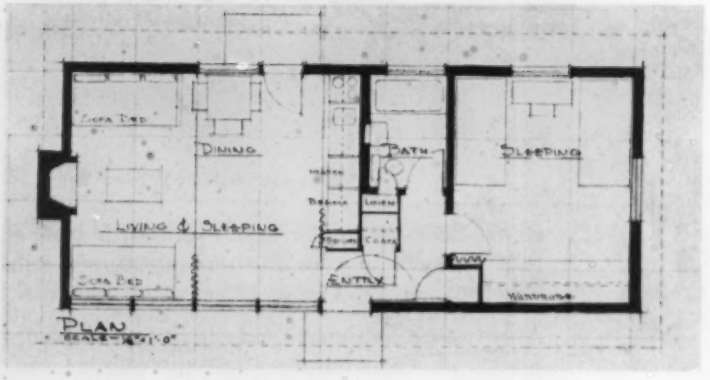
Old Program and New Potential

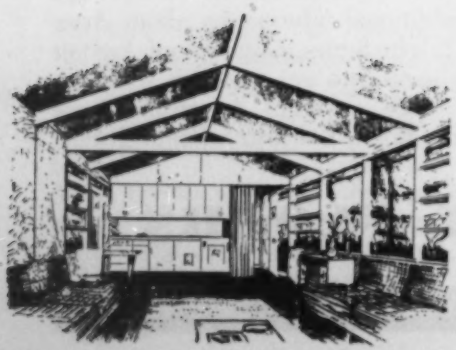
How extensive a national shelf of such plans would the $100 million loan fund provide? By previous B.C.F. experience, the General Services Administration estimates that planned public works costing around $3 million would result. That is based on current costs.

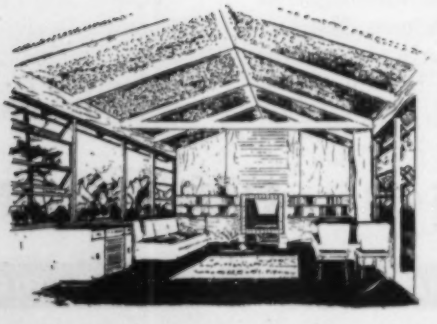
What has been accomplished? When the original authority was permitted by Congress to lapse on June 30, 1947, advances had been approved totaling $61.7

(*Continued on page 12*)









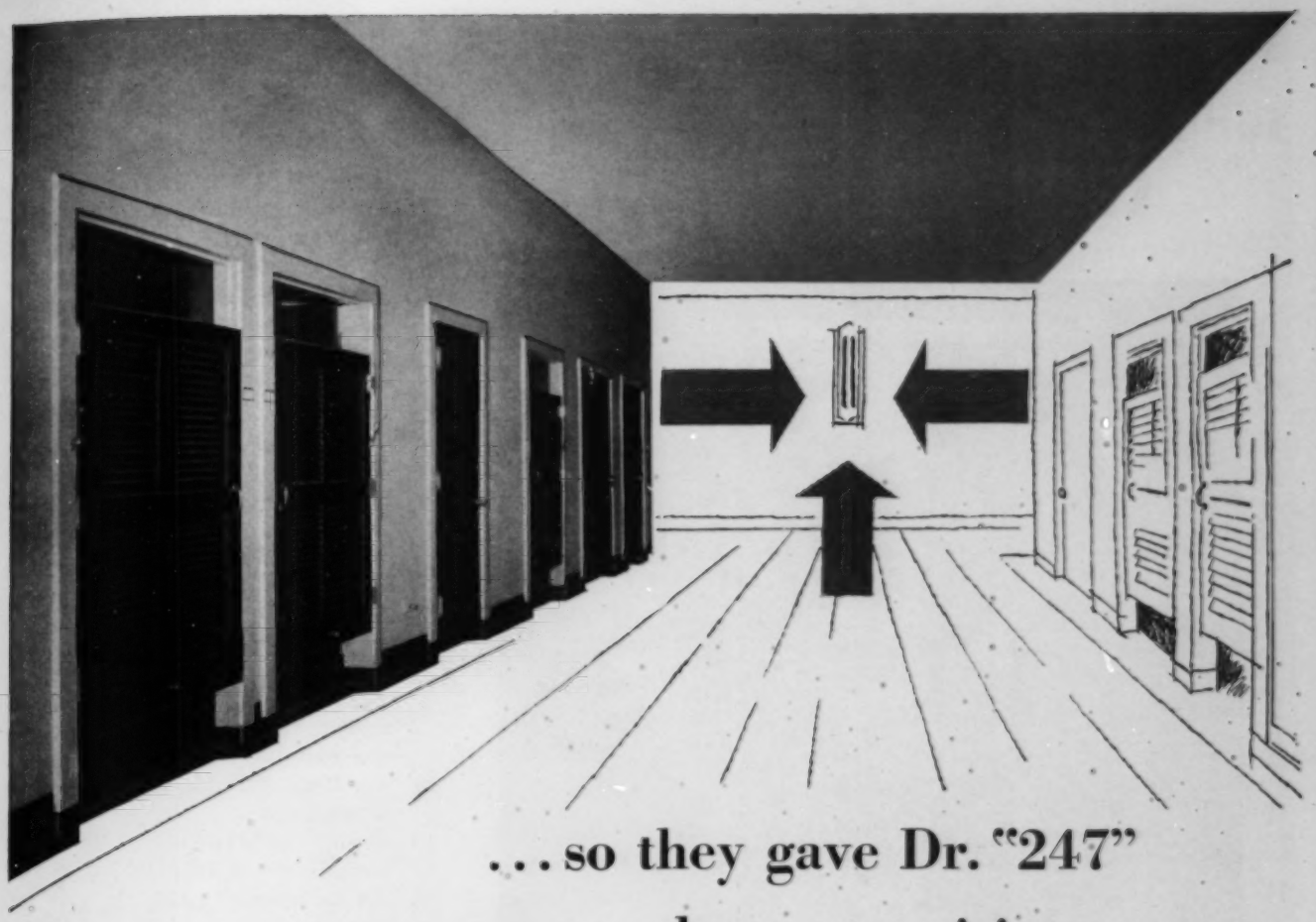
TIGHE WOODS ENTERS LOW-COST HOME CONSTRUCTION INDUSTRY

The nation's housing expediter, Tighe E. Woods, entered the home construction field this summer with the erection of two minimal homes which he plans to sell for around $6000 each. Formation of a building firm, to be known as Housing, Inc., with his assistant William G. Barr, was a result of their search for low-cost housing. The expediter hopes his venture will interest the industry in construction of similar one-story, two-room homes and the industry will no doubt watch the venture with interest on the basis of past failures to market such small units.

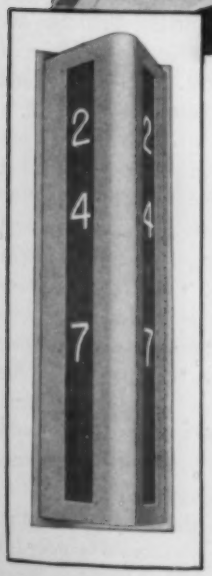
The firm has acquired 42 acres near Fort Belvoir, Va., and, depending on financial arrangements, plans to build 80 houses, offering a half-acre of land with each house which will sell for about $6750. As is, the house without land, dug well or septic tank, would cost $5900 including builder's profit of five per cent, Woods says.

The plans, drawn by Barr's brother, Richard Barr, architect in Joliet, Ill., provide a structure 14 by 36 ft. with a combination extra bedroom-living room measuring 14 by 16 ft. This space contains fireplace, pullman type kitchen and curtains which may be drawn to separate sleeping, living and cooking areas.

Exterior construction is of California redwood siding and structure rests on concrete slab reinforced with steel wire laid on a gravel base. No basement is included in the plan. Plywood is used extensively throughout. Glass radiant heating system costs only $200, Woods reports.



. . . so they gave Dr. "247" <u>three-way vision</u> . . .



NEW PAGING ANNUNCIATOR INCREASES EFFICIENCY...

If you can see the annunciator, you can see the signals . . . it's as simple as that with the new Edwards' inverted "V" design. Flashing numerals can be seen front, left and right. At all times, visibility is clean and sharp, without any haze or cross-lighting.

Write today for free specifications bulletin on all Edwards Hospital Signal Systems.

Edwards Co. Inc., Norwalk, Conn.

In Canada: Edwards of Canada, Ltd.

He wasn't "blind as a bat"—as the switchboard operators suggested. And he didn't miss his paging calls on purpose.

It was just that Dr. 247 never seemed to be *on top of* the annunciator when his number was flashed. And how else could he be expected to see his number on one of those "ornamental," low-visibility affairs?

But everyone's happy now. They've installed new Edwards Double-Face Type Annunciators... and 247 hasn't missed a call since! How can he—when this simple, clever inverted "v" design affords clear viewing from three *different directions?*

A small detail, perhaps—but typical of the Edwards product refinements that help architects specify more efficient hospital equipment.

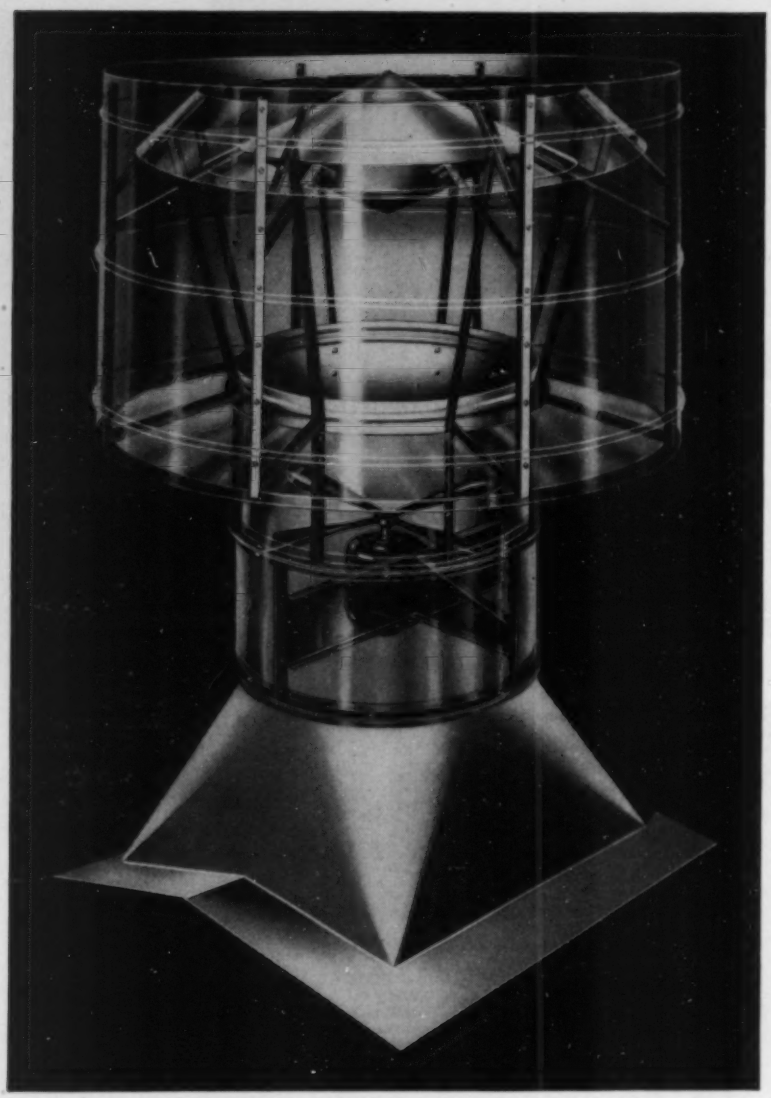
EDWARDS

HOSPITAL

Signal Systems

LOOK TO BURT

for the Solution to ALL Your Ventilating Problems



You'll find the solution to *your* ventilating problems in BURT'S complete line. It includes a size and type for almost every ventilating need—gravity, fan, revolving head and continuous ridge units. If special designs are required, BURT has the know-how and facilities to produce them for you. BURT'S experience from more than half a century is available—without obligation—at your request.

WRITE FOR CATALOGS AND DATA SHEETS

The BURT MFG. Co.

48 E. South Street Akron 11, Ohio, U.S.A.

VENTILATORS • LOUVERS • OIL FILTERS • SHEET METAL SPECIALTIES

(*Continued from page 10*)

million. These were to plan 7338 projects with aggregate cost of $2.3 billion. Planning now has been completed on 5827 of these having a currently estimated cost of $2.1 billion. As of June 30 last, 1540 of the 5827 blueprinted jobs had been started and the planning advances for those repaid to the U. S. treasury. But beginning construction on more than one-fourth of the shelved projects dropped the reserve by more than $400 million: from the $2.3 billion to $1.9 billion.

And here, Larson makes his strongest argument —

"Naturally, the reserve of planned projects will be depleted as these projects go under construction and we obtain payment. If the reserve is to be ready to help in stabilizing the construction industry, it must be replenished. As a result of the increased tempo in the accomplishment of state and local public works, there is no question that a very useful reserve of state and local projects can be planned within the next two years."

Right now there are 2272 applications for loan funds in the B.C.F. field office files; applications that were deferred when the authority expired two years ago. They are requests for a total of $31,456,821 in advance loans and are estimated to reflect $1,058,466,442 in construction cost. If the program should be revived, these applications would be given first attention.

Of less immediate interest were the amendments proposed to the Employment Act of 1946 by Sen. Murray (D-Mont.), and 17 other senators, although they went much further than the advance planning bills in the direction of economic expansion. Not only would the Murray amendments establish a B.C.F. loan fund of $500 million, but they also would give the President a federal advance planning fund of $100 million to be allocated to various federal departments for resource development and public works. The Reconstruction Finance Corporation would be empowered to make outstanding commitments, loans and advances up to $1 billion for financing resources development and public works projects. The loans would bear the going federal rate of interest and mature in 60 years.

No hearings on the Murray measure

(*Continued on page 14*)

Corrugated white translucent PLEXIGLAS *covers the entire ceiling of the main lobby and elevator foyer in the Central National Bank, Cleveland, Ohio. Specifications, developed by the Buckeye Lighting Division of General Electric, called for 1100 sq. ft. of* PLEXIGLAS *#122-125, .125" thick.*

Man Without a Shadow

A man *can* lose his shadow—under a PLEXIGLAS luminous ceiling. Translucent sheets of this acrylic plastic, installed from wall to wall under fluorescent lights, diffuse illumination so completely that shadows are eliminated.

PLEXIGLAS luminous ceilings do more than eliminate shadows. They eliminate glare—both direct and *reflected*. They provide even illumination throughout a room, and insure a low brightness factor. In both performance and appearance, they are pleasing to the eye.

The economy of PLEXIGLAS luminous ceilings matches their efficiency. Better lighting with lower electrical input results from the maximum transmission and minimum absorption of light by white translucent PLEXIGLAS. Installation of the thin, light-weight, remarkably strong sheets is easy and inexpensive. Maintenance costs are negligible, and replacement of the non-discoloring material is unnecessary.

In banks, drafting rooms, stores, classrooms and control rooms, PLEXIGLAS luminous ceilings have already been installed and are meeting every requirement for truly efficient lighting. Write us about *your* lighting problem. We will be glad to tell you more about this new, highly successful means of large-area illumination.

Canadian Distributor:
Crystal Glass & Plastics, Ltd.
282 St. Helens Ave., Toronto, Ont.

PLEXIGLAS *is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.*

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

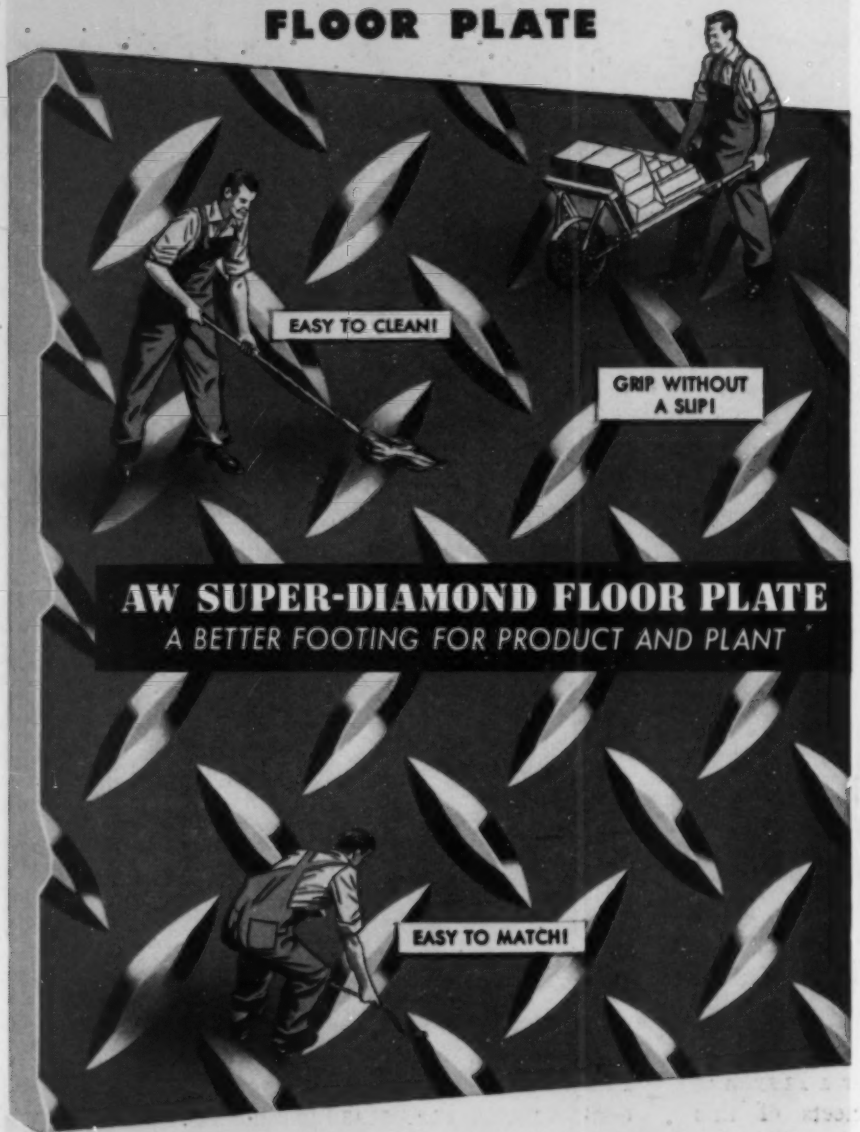
WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

Foundation for Safety

AW SUPER-DIAMOND

FLOOR PLATE



So easy to plan and build with—so safe and inexpensive. Exclusive engineered design, with Super-Diamonds at 45° angles, gives grip-without-a-slip safety and makes plates easy to match without waste. Use it for safe, strong, clean loading platforms, fire escapes, walkways, trench covers, running boards, machine tool bases and other product and plant applications.

FREE

16 Page Catalog L-33. It's packed with useful information. Write now.

AW SUPER-DIAMOND

FLOOR PLATES THAT GRIP

CONSHOHOCKEN, PA.

A Product of ALAN WOOD STEEL COMPANY

Other Products: Permaclad, Stainless Clad Steel • AW Algrip, Abrasive Floor Plate • Billets • Plates • Sheets (alloy and special grades)

THE RECORD REPORTS

(*Continued from page 12*)

had been scheduled and nothing more probably would be heard of it until the next session of Congress. The Administration appeared determined to handle the recession trend in its own way, with the Commerce Department making personal on-the-spot investigations of employment and general business conditions. Secretary Sawyer and his staff were visiting various areas of the nation for this purpose. They reported conditions directly to Dr. John R. Steelman, presidential assistant, who had been assigned the new function of channeling extra federal activity into those regions showing greatest need. These "relief" measures were to include government purchasing and some construction.

Progress at HHFA

The federal housing agency continued its organization for the task that lies ahead in administration of the U. S. Housing Act of 1949. President Truman had asked Congress for a supplemental appropriation of some $30 million to initiate the newer phases of public housing, slum clearance and the farm housing program.

While appropriations were awaited, best information from around the country indicated that 61 cities have readied plans for 256,000 low-rent public housing units. This activity can run into a $7 billion business with just about every large city participating — and many smaller ones — but this would take time, much time. Administrator Raymond M. Foley says 50,000 units at most will be built during the program's first year. Already the large cities are sending representatives to Washington. They are visiting Foley's office to ascertain the steps to be taken in making application for funds.

There are six states now without legislation permitting local housing authorities to proceed: Utah, Iowa, Oklahoma, Wyoming, Kansas and South Dakota. Every state legalizing the authorities has announced some sort of public housing plan except five: Idaho, North Dakota, Maine, New Hampshire and Vermont.

BRAB Advances Status

The Building Research Advisory Board has a new executive director. He is William H. Scheick who, until Sept. 1

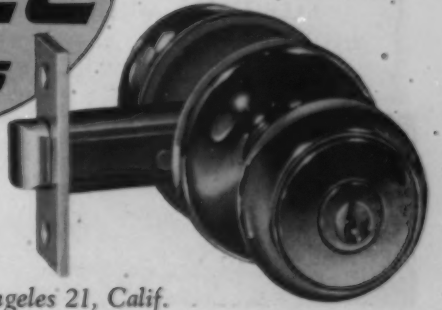
(*Continued on page 16*)

The IRON FIST that does a million good turns!

More than a million times in 30 days... *the equivalent of 70 years' wear and tear in a front door*... the knobs of random-chosen Kwikset locksets are yanked back and forth by a mechanical hand in a routine factory test. It's brutal treatment, but it's the only way we can constantly check the "in-use" life of our locks. So they take this punishment and prove Kwikset endurance. But endurance isn't the whole story. These locks are *handsome*... beautifully hand-finished in polished or satin brass or chrome, or satin bronze, to enhance the appearance of any door. Further, their cost is pleasingly low, and simplified 2-hole installation saves time on the job. Available with or without deadlatch for standard residential installations. Write for file-size catalogue.

Manufactured by
KWIKSET LOCKS, INC.
Anaheim, California

Kwikset LOCKSETS



MATERIALS AND WORKMANSHIP UNCONDITIONALLY GUARANTEED

Kwikset performance is built in! Working parts are of brass stampings or sturdy Zamak No. 5. Trim parts are wrought bronze, wrought brass or Zamak No. 5, all precision engineered for trouble-free service.

Distributed by **PETKO INDUSTRIES, INC.,** *1107 E. Eighth St., Los Angeles 21, Calif.*

Always . . . THE RIGHT COMBINATION

INTERCHANGEABLE DEVICES

with UNILINE TRADE MARK PLATES

Use these units for compact, practical installation of multiple-wiring devices into one gang. With UNILINE plates, in Ivorylite or brown Bakelite, any combination desired can be installed quickly — right on the job. Switches, receptacles and pilot lights can be easily interchanged. The line provides innumerable combinations for attractive 1-Gang installations for 2 or 3 units at a saving of material and labor.

LISTED AS STANDARD BY UNDERWRITERS' LABORATORIES, INC.

Branch Offices at: Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, New York, Philadelphia, San Francisco, Syracuse.

SEE OUR LISTING IN SWEET'S ARCHITECTURAL FILE

ARCHITECTS WHO KNOW BEST SPECIFY

WRITE FOR LITERATURE ON THESE AND OTHER WIRING DEVICES TO:
1909 LAUREL STREET
HARTFORD 6, CONN.

HART H & H HEGEMAN DIVISION

WIRING DEVICES

ENCLOSED SWITCHES

THE ARROW-HART & HEGEMAN ELECTRIC COMPANY
HARTFORD, CONNECTICUT

THE RECORD REPORTS

(*Continued from page 14*)

when he took over the directorship, was coordinator of the Small Homes Council at the University of Illinois. The board is a combined effort on the part of industry, government and science to further technological research in all sectors of the building construction industry.

The appointment marks the first step in developing an operating staff for BRAB. The selection of Mr. Scheick to head its activities is lauded by construction interests. He was highly successful in research work at the University of Illinois and will carry on in the same type of activity at the National Research Council headquarters in Washington. He now will have responsibilities on a national and international scale, however.

Shorts

• A new move was made to reactivate the joint national board for settling jurisdictional disputes in the construction industry. At the instigation of labor, a meeting was held August 4 to see what could be done to bring the defunct operation back into existence. Organized a year ago to handle jurisdictional labor disputes and thus eliminate need for National Labor Relations Board intervention, the industry effort was terminated July 1 at the instance of the Building Trades Department of the American Federation of Labor. Lack of any congressional revision of the Taft-Hartley Act prompted the unions to reconsider their decision to end the board. With T-H unchanged, contractors still are backed by NLRB in their right to make work assignments.

• As the second half of 1949 started, 62 new hospitals were underway in the Veterans Administration construction program, three times the number in progress at mid-year, 1945. Construction contracts had been awarded on 32 of the 62 and designs had been completed but awaited contract award on nine others. Plans were being prepared for 19, were not yet started for two more. Thirty-two addition and conversion projects had been completed.

• Two engineers and an architect have been named to aid in renovation of the White House:

William A. Delano, New York City architect. He is a former member of the National Capital Park and Planning Commission. His designs include the

(*Continued on page 18*)

Ease of Installation

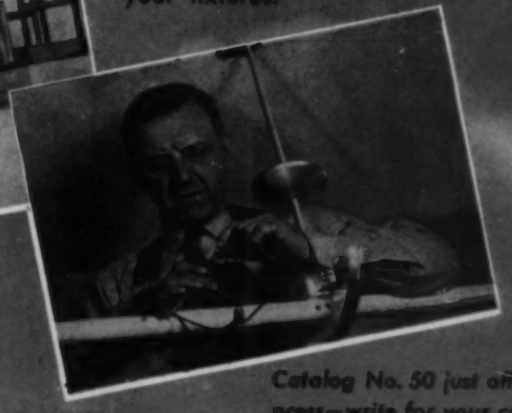
IS A FEATURE OF *Wakefield* LIGHTING EQUIPMENT

Almost like hanging a picture . . .

Everything hooks on to pre-installed straps . . .

A one-man job . . .

The secret is the pre-installed strap. First step is to secure a mounting strap to the outlet box. Next run a chalk line along the ceiling, measure off the required intervals and then attach the other mounting straps in the line. The easily assembled units are then hung on the mounting straps, unit by unit, the supporting band on the previously mounted unit providing the reflector support for the end of the next unit. A steel channel insures rigidity for the wireway, and snap-on wireway covers give accessibility for wiring. Writes one power company engineer: "Contractors have been vociferous in their praise of the ease with which they were able to install your fixtures."



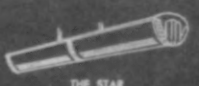
1. Fully Guaranteed
2. A.F. of L. Labels
3. Underwriters Approved
4. Certified Ballasts

Catalog No. 50 just off the press—write for your copy!

Wakefield Over-ALL Lighting

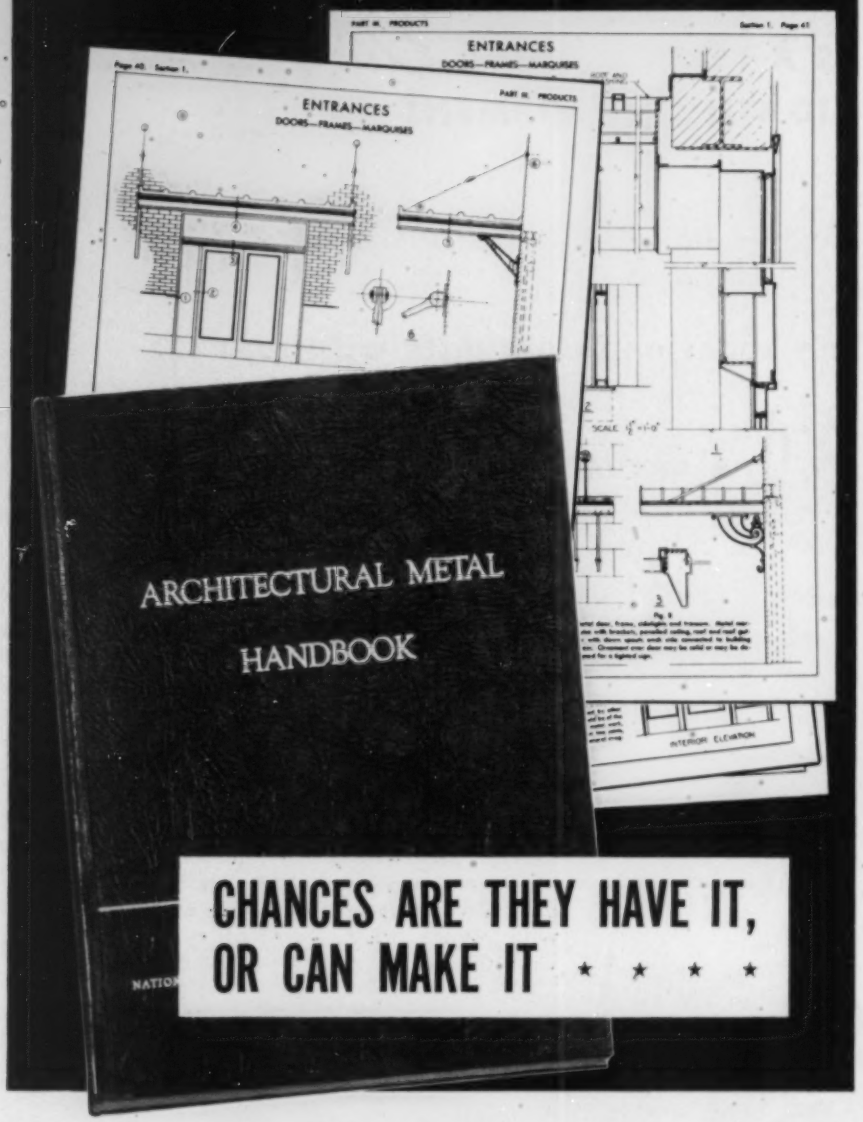
THE GRENADIER II

THE COMMODORE



THE STAR

contact Michaels!



And it will be to your advantage to talk over with Michaels your metal building materials requirements. Since 1870 we have been designing and fabricating in metal the building products specified by architects and builders, and the knowledge acquired during more than three-fourths of a century is at your disposal. The products shown in The Architectural Handbook, illustrated, or special creations of architects will be carefully and faithfully executed in metal to the most exacting specifications. Whatever you need, if it's made of stainless steel, aluminum or bronze, be sure to contact Michaels first. Write for literature. The partial list at the right gives you an idea of the wide range of Michaels products.

MICHAELS PRODUCTS

Bank Screens and Partitions
Welded Bronze Doors
Elevator Doors
Store Fronts
Lettering
Check Desks (standing and wall)
Lamp Standards
Marquises
Tablets and Signs
Name Plates
Astragals (adjustable)
Stair Railings (cast and wrought)
Wrought and Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
Cast Thresholds
Extruded Thresholds
MI-CO Parking Meters
Museum Trophy Cases

The MICHAELS ART BRONZE CO., Inc., 234 Scott St., Covington, Ky.

THE RECORD REPORTS

(*Continued from page 16*)

new Post Office Building in Washington, the Japanese Embassy building here, and the American Embassy in Paris, France. It was Delano who drew plans for the famous White House balcony.

Ernest E. Howard, Kansas City, Mo. His firm is Howard, Needles, Tammen, and Bergendoff, internationally known bridge designers.

Emil H. Praeger, partner in the Long Island City engineering firm of Madigan-Hyland and former head of the civil engineering department of Rensselaer Polytechnic Institute.

• Nineteen shopping centers located in 11 states and the District of Columbia are given detailed treatment in Technical Bulletin No. 11, published by the Urban Land Institute. Site layout and design features are analyzed. Photos and drawings illustrate the wide range of centers discussed. Later U.L.I. bulletins will deal with problems of location, market analysis and trade area which are largely ignored in No. 11.

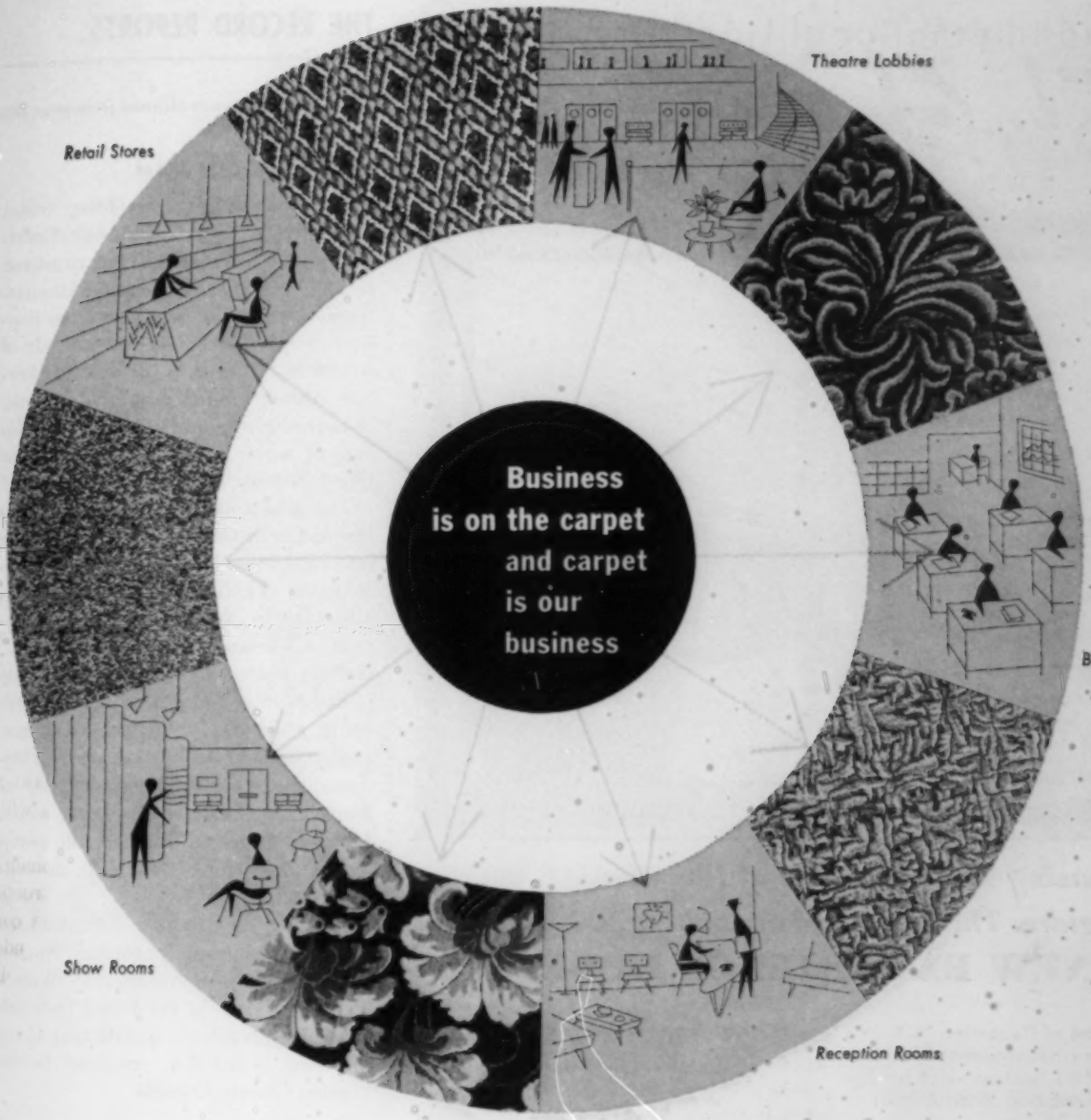
• For the first time in Civil Aeronautics Administration's airport construction program the number of projects completed add up to more than those underway. A large majority of the going projects were more than 50 per cent completed. A total of 339 at 298 separate locations had been completed; 334 others were in progress. Grant offers made to date totaled 831 or $83,859,735 in federal funds.

• There was a chance Congress might pry more deeply into the operations of Lustron Corporation, Columbus, Ohio, prefabricators of housing. At the request of Rep. Frederick Smith (R-Ohio), ranking member of the House Banking and Currency committee, permission was given to summon officials of the Lustron firm and officers of the Reconstruction Finance Corporation. Mr. Smith wanted them to produce books and records showing operations of Lustron under multi-million dollar loans it has obtained from R.F.C.

Said the Ohio Congressman: "I want to find out whether there is any truth to reports that the Lustron Corporation has borrowed $34 million or more from the R.F.C. while putting up only $800,000 as its share of the costs."

Lustron turns out enamel-covered steel houses that sell for around $10,000 each.

(*News continued on page 20*)



Whether you're designing an airline terminal or a shoe store, your client has probably told you that today's competitive conditions put his business on the carpet. And whether you're remodeling an insurance office or a restaurant, chances are you plan to use carpet in that business. That's why today, when it's more important than ever for your client to keep his best foot forward, we suggest you consult an Alexander Smith-Masland contract carpet specialist. We at Alexander Smith and C. H. Masland have a tremendous range of carpet weaves, qualities, and colors for you to choose from ... dozens of unique services to offer you . . . years of experience to help you solve your installation problems quickly and economically. Put your client's business on the best possible footing! Get in touch with one of our contract carpet representatives today!

Alexander Smith
C.H.Masland

CONTRACT CARPETS

295 FIFTH AVENUE, N. Y. 16, N. Y.

...at Third International Lighting Exposition

NEW "Sky-Glo" LIGHTING wins highest* award!

... an amazing 90 footcandles of illumination, without annoying glare. This new kind of inviting, friendly light creates a **NEW EXPERIENCE IN SEEING!**

Says Central Trust of Rochester, N. Y. in a recent newspaper advertisement about their new quarters and the lighting which has just been awarded a Gold Seal Merit Award:

"The treat's on us to show you around a truly modern bank. The new coloring, smart paneling and "Sky-Glo" Lighting, blend in together to create a friendly, welcoming atmosphere... an atmosphere we've always tried to maintain when serving you."

"Sky-Glo" Lighting is DIFFERENT because the louvers not only reflect light but GLOW WITH LIGHT! "Sky-Glo" is the first LOUVERALL CEILING to utilize the translucent qualities of VINYLITE to produce illumination so soft, restful and exhilarating that it creates a new experience in seeing.

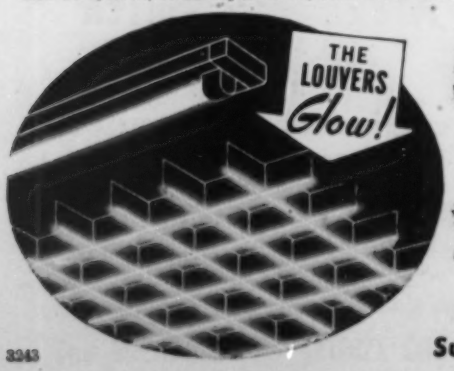
MOST BEAUTIFUL LIGHTING

Incomparable, too, is the beauty of "Sky-Glo". Gone is the need for a forest of fixtures. Gone, too, is the need for expensive ceiling repair and decoration. "Sky-Glo" is the answer! "Sky-Glo" converts old ceilings into new, modern, beautiful "skies of light"... conceals the lighting fixtures and obsolete ceiling decoration.

SEE "SKY-GLO" NEAR YOU

From Coast to Coast are hundreds of "Sky-Glo" installations... in offices... stores... institutions and schools. Send for "SKY-GLO" INSTALLATION LIST and plan to visit those nearest you. It's the only way to truly comprehend the miracle of "Sky-Glo" Lighting. Write: BENJAMIN ELECTRIC MFG. CO., DEPT. Q-1, DES PLAINES, ILLINOIS.

* *One of the 14 Installations Awarded Gold Seal Merit Awards at the Third International Lighting Exposition, Chicago, March 29-April 1, 1949, to R. Bruce Thompson, General Electric Supply Corporation; A. G. Alexander, New York, N. Y., Consulting Architect; T. H. Greene Electric Company, Rochester, N. Y., Electrical Contractor.*



BENJAMIN "Sky-Glo"

LUMINOUS LOUVERED LIGHTING SYSTEM

Distributed Exclusively Through Electrical Wholesalers

Ask Your Electrical Contractor to Submit a Planned Lighting Proposal

3243

THE RECORD REPORTS

(*News continued from page 18*)

VISITING BRITISH TEAM

The seventeen-man building trades productivity team of the Anglo-American Council on Productivity, sponsored by the Economic Cooperation Administration, arrived in New York from England on July 22 for a six-weeks' study of American methods of constructing low- and medium-cost houses, small schools, industrial plants and commercial buildings of a size comparable to those in Great Britain.

The group has been particularly interested in methods of utilizing building materials other than lumber in the construction of houses. The team has been observing in New York, Chicago, Detroit, Cleveland, Washington, D. C., Buffalo, Boston and elsewhere, methods of design, cost and procedure, the manner in which owner, architect, engineer, contractor and building craftsmen cooperate in labor relations. A study of financing methods is also being made. Upon its return to England, the group will prepare a full report on its observations.

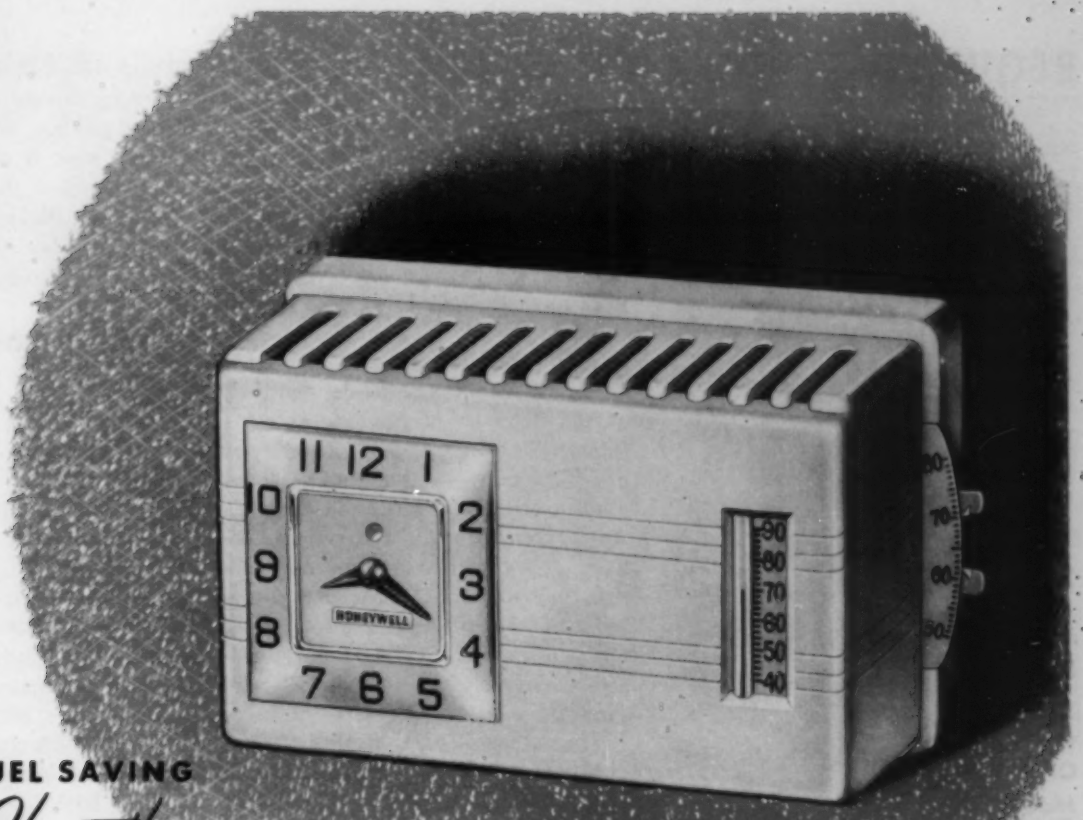
Heading the group is Robert Owen Lloyd, Birkenhead contractor. Among the members are Michael T. Waterhouse, president of the Royal Institute of British Architects, and Robert Hogg Matthew, A.R.I.B.A., architect to the London County Council.

Guests at Building Trades Employers Assn. luncheon in New York for team: (left to right) Michael T. Waterhouse, president, R.I.B.A.; Ralph T. Walker, president, A.I.A.; Thomas S. Holden, president, F. W. Dodge Corp.; Wilfred Horsfall, building contractor, Liversedge, Yorkshire

DOCTOR'S HOUSE

Reflective radiant conditioning with a view towards low-cost year-round interior comfort will be the subject of a personal field test with the construction of an experimental residence for Dr. Clar-

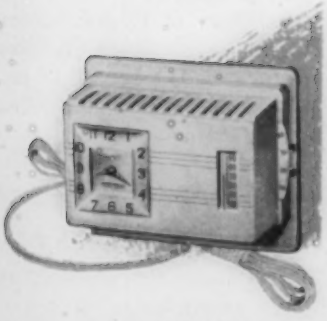
(*Continued on page 158*)



THE **NEW** FUEL SAVING
COMFORT *Chronotherm*

NOT JUST A THERMOSTAT

THE new Honeywell Comfort Chronotherm is not just a thermostat. Of course it is the finest, most accurate and most sensitive thermostat ever conceived, but in addition it is a real fuel saver, 24 hours a day. Equipped with a Telechron clock, this amazing Chronotherm automatically lowers the room temperature to a fuel saving level at night, and automatically returns it in the morning—at any hour selected. Recommend and specify Chronotherm on every job. Assure your clients of complete automatic heating satisfaction. They will not only have the finest in thermostats but will save fuel and gain untold convenience as well. And remember, Chronotherm will pay for itself in fuel savings.



The new Plug-In Chronotherm is designed to replace all manual thermostats. All the advantages of the regular Chronotherm. Anyone can install it in a few minutes.

MINNEAPOLIS
Honeywell
CONTROL SYSTEMS

73 BRANCHES FROM COAST TO COAST WITH SUBSIDIARY COMPANIES IN: TORONTO • LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS • ZURICH • MEXICO CITY

REQUIRED READING

Homer Page Photo

Marcel Breuer. From "Marcel Breuer: Architect and Designer"

THE AMERICANIZATION OF BREUER

Marcel Breuer: Architect and Designer. By Peter Blake. An Architectural Record Book published in collaboration with the Museum of Modern Art. The Architectural Record (119 W. 40th St., New York 18, N. Y.), 1949. 8 by 10½ in. 128 pp., 196 plates. $4.00.

Reviewed by FREDERICK GUTHEIM

Alone among all the brilliant architects who came to us in the decade of the thirties, refugees from political dictatorships, Marcel Breuer has shown marked ability to grow, to adapt, to acclimatize himself. He was younger; he was more prepared to accept the America he found. The great power he exerts today, especially over the imaginations of the younger men in architecture, is directly related to the fact that he has developed a fresh and romantic esthetic in the new world vein; that he has mastered American building methods in order to carry his ideas to the testing ground of construction; and that, although a great teacher, he is essentially an artist rather than a theorist.

Breuer is, as Mr. Blake suggests, anti-intellectual. His work requires a discussion like this, for much of it, as is often the case, has been developed in obscure and half-forgotten projects rather than in buildings which (the architect overconfidently points out) "speak plainly enough for themselves" — if they get built. A further proof of the need for this book will be found in the bibliography, which lists only nine writings of any description by Breuer since 1925, and a few sketchy surveys of his work, the most considerable being the essay Henry-Russell Hitchcock contributed to the catalog of the 1938 Harvard exhibition of Breuer's work.

In the loose definition to which we have become accustomed, Mr. Blake's work might be called a catalog, for although it is published in connection with no exhibition (unless it be the exhibition of the Breuer "House in the Garden" at the Museum of Modern Art this summer), it contains the list of buildings and projects, the comprehensive bibliography, selections from the architect's writings, and other data the scholar demands, so that it serves as the single definitive work on Breuer that supersedes all others. It includes photographs and plans of all the major buildings, construction details, and a good selection of illustrations of the designer's furniture.

The author sketches briefly but sufficiently what he considers to be the chief sources of Breuer's style in the peasant vernacular of his Magyar childhood, and the peculiarly stimulating atmosphere of the Bauhaus in the twenties. The cooperation of his subject gives this part of his book the special charm of recollection and anecdote. On the whole, one wishes Mr. Blake had made more of this opportunity to enrich his text with biographical detail and *reportage*, for it is not often a writer gets his hands on so witty and colorful a subject. As it is, just enough of this has crept into the book to be confusing: one is often in doubt whether the book's authority derives from autobiography or from criticism. Thus, when Mr. Blake asserts the major conclusion of the European section of his book, that Breuer became "one of the chief exponents within the Bauhaus of the American assembly line," but gives no other evidence to support it, one is tempted to assume that it represents Breuer's own estimate of his position at the time rather than Mr. Blake's conclusion.

Mr. Blake implies that good judgment in selection from among the conflicting elements that have composed the modern movement, rather than originality, has been the distinguishing characteristic of Breuer's work, and it is this in the architect's success he offers as an example to others. This spurious neo-eclecticism seems to me to do less justice to Breuer than he deserves, as well as to gloss over fundamental conflicts within the modern movement that would profit more by examination. Breuer now occupies a unique middle ground between Frank Lloyd Wright and LeCorbusier. How he arrived at this delicately balanced position, whether it is a true synthesis, what it offers to the future of architecture — these are questions on which Mr. Blake offers little in the way of opinion, but which the readers of his book must decide for themselves.

HOUSE OF CONCRETE

Pour Yourself A House. By Frazier Forman Peters. Whittlesey House, McGraw-Hill Book Co., Inc. (330 W. 42nd St., New York 18, N. Y.), 1949. 6¼ by 9¼ in. 217 pp., illus. $3.95.

Designed for the layman, this is an instruction book on the building of a four-room house of concrete or of stone and concrete. The author maintains that anyone with determination and a little time can produce, with an expenditure of $4000 for materials, a convenient and livable home, attractive to the eye and with the endurance of the long lasting French and Pennsylvania Dutch houses.

The book takes the reader through every major step in the process of constructing a concrete house from the laying out of the land to the building of a chimney and includes details of plot purchase, wiring, plumbing, heating and the construction of a septic disposal unit. It also provides instructions for the building of kitchen cabinets and the arrangement of lighting fixtures throughout the house. Photographs and many drawings accompany the text to illustrate each step.

ENGLISH ARCHITECTURE

A History of The English House. By Nathaniel Lloyd. The Architectural Press (9–13 Queen Anne's Gate, London S.W.1, Eng.), 1949. 9¼ by 12½ in. 487 pp., illus. £3 13s. 6d.

The reprinting of this standard work on the history of English houses is a welcome one not only for its value as a reference work but because it provides in one volume a thorough treatment of a theme of extremely wide range. Out of print for some years since its first publication in 1931, the volume provides a graphic survey of the development of architectural types in England from primitive times to the Victorian period.

Many photographs, drawings and plans illustrate the volume, beginning with the earliest architectural examples that exist. The arrangement of the pictorial sections, separated from the main text as they are, is such that the volume consists of treatises upon a dozen branches of architecture, each linked

(Continued on page 30)

The *Proof* of the PRODUCT is in its *Performance*

The Very First RIC-WIL Prefabricated Insulated Pipe Units Ever Installed Are Still Giving Trouble-Free Service After 14 Years of Constant Use

1935 Original condition of asphalt-coated conduit.

1941 Asphalt-coated conduit still in perfect condition.

1949: All lines functioning perfectly, trouble-free

MINNEAPOLIS **"No trouble . . . in constant use"**
OMAHA **"In good condition and is still serving in its original capacity"**
DES MOINES **"No trouble . . . in first class shape"**

In 1935 the first Ric-wiL Insulated Pipe Units using asphalt-coated Hel-cor conduit as the outer protective housing were installed for a large products pipe line company, at Minneapolis, Omaha and Des Moines. Each of these steam lines consisted of 3" pipe insulated and enclosed in 8" conduit of standard 21' length Ric-wiL Units, with return lines laid outside the conduit.

In 1941 a check-up on these Ric-wiL Units under actual service conditions was made. Parts of the runs were excavated and a careful examination made of the conduit, fittings, etc. The Ric-wiL Units were in practically perfect condition, the same as they were when installed, with no perceptible deterioration or other damage.

In 1949 a further check-up of all three installations was made. This investigation, as indicated by the quotations from the reports given above, showed all the lines still in constant use, functioning satisfactorily and trouble-free.

In the years since this original installation, in thousands of central heating and industrial processing projects, Ric-wiL Insulated Pipe Units, constantly improved by engineering research and development, **have continued to prove, through performance, their right to unchallenged leadership in this field.**

1. **HOUSING** of strong, shock-proof 16 gauge hot-dip galvanized Hel-cor conduit, spirally corrugated. Inside bonderized and coated with baked phenolic resin for additional protection.
2. **HIGH TEMPERATURE** asphalt coatings reinforced with tension wrapping of asphalt-saturated asbestos felt.
3. **INSULATION** of high thermal efficiency—any required type or thickness.
4. **PRESEAL RING** of steam-cured insulating cement protects units during shipping and installation.
5. **HEAVY IRON COLLAR** provides a firm foundation in making full-welded watertight field joints.

For complete information write for Ric-wiL Prefabricated Insulated Piping Systems Catalog 480-4. Address: The Ric-wiL Company, Dept. S-18.

RIC-WIL
INSULATED PIPING SYSTEMS
THE RIC-WIL COMPANY • CLEVELAND, OHIO
REPRESENTATIVES IN PRINCIPAL CITIES

IT'S A "RINGER"

Seelux*

for finest indirect lighting

lifetime beauty, efficiency

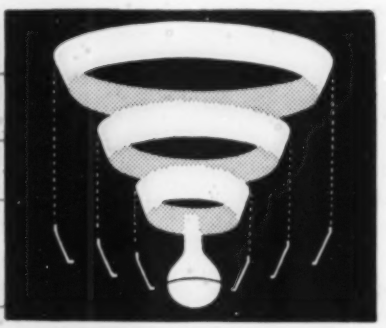
practically *no maintenance*

SPUN ALUMINUM LOUVRES
for distinctive modern design.

HEATPROOF ALZAK** FINISH
is not discolored or affected by lamp heat.

DUSTLESS OPEN BOTTOM
minimizes cleaning — dirt falls through.

SILVERBOWL LAMP
provides built-in reflector. Peak efficiency is *automatically* restored; when lamp is replaced, you have a new reflector.



The functional simplicity and beauty of the GUTH SEELUX make it the standout among indirect incandescent luminaires. Compare these SEELUX specs with *any* similar fixtures:

18-Gauge aluminum, emery-grained ALZAK finish. Concentric spun louvres with 25° pitch, positioned with three die-stamped 12-gauge aluminum straps riveted to each ring. Socket cover, semi-polished ALZAK; 6" canopy, stem and swivel, ALZAK aluminum; black porcelain U. L. approved lampholder.

Have you our Bulletin 840-1-J with full details on the SEELUX, SEELUX *Plus* and other fine GUTH Incandescent Indirects? It's yours for the asking from

* ® and Patents Pending
**® and Patented, Aluminum Co. of America

Guth LIGHTING

THE EDWIN F. GUTH COMPANY / ST. LOUIS 3, MISSOURI

Leaders in Lighting Since 1902

023

REQUIRED READING

(*Continued from page 28*)

with the others by captions and references to the general text. Among these separate pictorial chapters are ones on exteriors, entrances, windows, chimneys, interiors, staircases and metalwork. Certain buildings photographed have obviously been altered through the years but where such changes are not apparent mention has been made by the author.

MODERN HOUSE DESIGN

The Things We See: Houses. By Lionel Brett. Penguin Books Ltd. (West Drayton, Middlesex, Eng.), 1947. 7 by 8½ in. 64 pp., illus., 2s. 6d.

This evaluation of the development in modern housing is a noteworthy attempt to improve the public taste. Writing for the man "who pays the piper," the author reveals his perceptive abilities throughout the book and particularly in his realization of the importance of the buying public in governing construction trends. This public, he states, buys for appearance; an educated public will enable contemporary architects to leave behind them an impressive heritage.

As the author traces the origins of modern architecture in its revolt against the stale ornamentation of an earlier period, he points out not only the pleasing details of modern design but its drawbacks as encountered in the first modern houses to appear on the English scene in the 'thirties. The influence of the machine and its accompanying distortions are clearly traced for the reader. Architects went off the deep end, he says, and with their "free planning" method (which is now being used to advantage) had indoors and outdoors hopelessly crammed together. Each functional space flowed into the next with the net result that the "delivery boy with the meat flowed through the living space on his way to the larder."

However, with all their crudities, the early forms spearheaded the design of a modern house which now rests lightly upon its site and instead of proclaiming "I am correct," now says to the world, "I am happy." The advantages of post-war architecture include an aesthetic unity in design, the omission of stale ornamentation which enables us to see things as a whole, as in a gracefully rising stairway, and the return to the friendlier textures in place of barren white walls.

ARCHITECTURAL

RECORD

HAROLD D. HAUF, A.I.A., A.S.C.E., BECOMES EDITOR-IN-CHIEF

HAROLD D. HAUF, Chairman of the Department of Architecture and Professor of Architectural Engineering, Yale University, has been appointed Editor-in-Chief of ARCHITECTURAL RECORD. He has relinquished his posts at Yale to assume his new duties on September 1, succeeding Kenneth K. Stowell.

To his new post Mr. Hauf brings other relevant background experience. He is a past president of the Connecticut chapter of the American Institute of Architects. He is vice president of the Association of Collegiate Schools of Architecture. He is co-chairman of the joint committee of A.I.A. and the Producers' Council.

Mr. Hauf received his Bachelor of Science degree in architectural engineering at the University of Michigan in 1927. He obtained his Master's degree in engineering at Yale in 1932. From 1929 till August of this year, Mr. Hauf taught at Yale, starting as an instructor and advancing to chairmanship of the department.

During the war he was a naval commander in the Civil Engineer Corps, assigned to the Bureau of Yards and Docks. Successively he headed the camouflage section, the training coordination section and the hospital facilities division.

Along the way Mr. Hauf functioned briefly, on leave from Yale, as director of the technical branch of the National Housing Agency and was consultant to the State of Connecticut on reorganization of public building procedures.

Since June 1930, and concurrently with his duties at Yale, Mr. Hauf has carried on a private consulting practice as an architectural engineer.

Mr. Stowell, who has served his profession with distinction since 1942 when he assumed the editorship of ARCHITECTURAL RECORD, is leaving to engage in practice, which he has wanted to do for some time. He has been named Vice President of Giffels & Vallet, Inc. and L. Rossetti, of Detroit, heading the firm's New York office. He continues his close personal interest in the RECORD as chairman of its editorial advisory committee.

At a time when the RECORD is serving more architects and more consulting engineers than ever before subscribed to an architectural magazine, the publishers are happy to present as successor to Kenneth Stowell a man who is a registered architect, a licensed engineer, a skilled practitioner in both professions, an experienced educator, and a man who believes that ARCHITECTURAL RECORD has a truly great opportunity to expand still further the magazine's service and inspiration to active architects and engineers.

Judd Payne

Publishing Director, Magazine and Book Division
F. W. Dodge Corporation

Neutra (pp. 102–104)

HOUSES

ARCHITECTURAL RECORD'S BUILDING TYPES

PREPARED UNDER THE EDITORIAL DIRECTION

THE CASE FOR THE CLIENT

JOE DOAKES says he's going to build a modern house. None of these stuffy little boxes for Joe; he's going to have a long, low, ranch-house type Colonial, with white clapboards, big picture windows, and a barbecue on the terrace. Joe doesn't know it yet, but he has a surprise coming to him — he really is going to build a modern house.

Our Mr. Doakes has a shrewd enough business head, has done well, and prides himself on his practicality and unflinching realism; yet, when it comes to his home he allows his judgment to be swayed by a mixture of sentiment, nostalgia and atavism which he mistakes for a latent talent in design. Using this new-found ability, he designs his house in his head. As soon as the dream has become substantial enough for him to take a mental walk all the way around it and not change anything, he takes paper and pencil and roughs out a plan, just to be sure the inside will work. Realizing that there are tricks to planning, and handicapped by his inability to draw, Doakes then goes to a very good architect, explains what he wants to do and asks Mr. Architect to straighten out the kinks and draw up the plans.

So, unsuspected, begins the initiation of Mr. Joseph Doakes into the mysteries of modern architecture. We leave him there, secure in the knowledge that when it's all over he'll have a skillfully planned and smartly designed home, innocent of any sterile reference to the past — a good, honest, contemporary job.

Not so many years have come and gone since our architectural journals were publishing houses of quite another sort. Large, handsome and expensive, they were filled with intricate and sometimes beautiful detail, and their construction called for the kinds of materials and craftsmanship that seem centuries removed from our postwar world of economies, substitutes and want of skilled labor. Anachronisms already, they bring a very low price when they come up for sale; but in their day they were objects of pride to their designers — and the client, steeping himself avidly in the lore of the particular tradition his house was to follow, had a wonderful time.

Is it wise for us to be hasty or supercilious in our estimate of what went on in those days? They were the days of the extensive architectural libraries, collections of books which were rare and costly in proportion to the magnificence of their owner's practice; they were the days of that well-worn joke about the famous architect who was suffering from complete frustration in his efforts to design a certain important building, only to be rescued by the fortuitous discovery in England of a very rare book of measured drawings and details. (Perhaps that joke isn't as funny as it used to be when we thought the library would never come back.)

It was probably inevitable that in time, and by the light of a few minds that were brilliantly ahead of their time, architecture should find its way out of this antiquarianism and ancestor worship. To those of us who are enthusiastic supporters of contemporary work, yet old enough to remember when we thought the other was great stuff, it is sometimes hard to comprehend how so many and such fundamental changes could be accomplished in so short a period. At other times, it seems to have been a long, hard struggle, a tedious and sometimes bitter fight with the forces of reaction. For the

Lee (pp. 116–118)

STUDY NUMBER 153

OF ARTHUR McK. STIRES

Esherick (pp. 92–97)

purposes of this article the latter impression is the important one to consider.

The question might be asked: In the modern architect's efforts to project the design of the contemporary house always further ahead — further away from reaction — is the human equation, the client, sometimes too little considered? Is there any danger that modern houses, which so recently were struggling for bare recognition in a world of entrenched traditionalism, now are being designed too much in competition with each other? In other words, has reaction become a phobia, and novelty a cult? Even if this is true only in a very narrow sense, it may still be in the best interests of our developing architecture of the home to give it passing consideration.

Perhaps a little too much emphasis is being placed on the overall character of a man's work (one almost uses the word "style") by comparison with the work of some of his fellow-professionals, and without sufficient regard to the degree to which he may have solved the problem and made his client happy. Perhaps the public — that is, the client — is actually one of the more reliable and valuable checks on the course and progress of modern house architecture and should be more generally so regarded. Doubtless you have seen modern houses which had more the aspect of experimental structures than of homes, which one felt were too much the result of the unyielding intellectual approach and quite unnecessarily lacking in the kind of warmth and character that make a house appealing to those who live in it and to those who visit it.

Yet these are precisely the things that most clients want — warmth and character of the sort that will appeal to them. When they get them (as happens!) one usually finds there has been a genuinely sensitive collaboration between client and architect; when they fail to get them it may follow that the client has been too little considered, his ideas or suggestions uprooted or demolished by superior logic or main strength.

Actually, the things the client seems a little wistfully to want, or a little fearfully to not want, are seldom of the sort that would seriously affect the basic design characteristics of the house, one way or the other. The plan of the modern house is one of its distinguishing and distinguished attainments; yet, despite the very great differences between it and the popular plans it supersedes, how many clients fail to react favorably to it at first sight? Even when they approach the elevations and discover their house has a flat roof and no cellar, the reasons behind the design often will suffice to open their minds and enable them to accept it without reserve.

But now comes the point at which client and architect are discussing details of materials and design, and this may be the place where the client, having already strained his intellectual sacroiliac in trying to adjust himself to this new and marvelous kind of home, will exhibit signs of weakness. He may be unable to understand, for example, why the white-painted clapboard he hoped he could have for at least part of the exterior was gently ruled out in favor of stained board-and-batten — only to have the painted clapboard show up, vertical, on one end of the living room. Or he may begin to get a little neurotic about the openness of everything; he saw it in plan, but he didn't realize quite how it would be

Doub (pp. 108–111

Lawrence & Hazen (pp. 112–113)

Drake (pp. 98–101)

until the perspectives were shown him. He may even fix on some trifle like the handrail on the stairway — an amusing little thing, actually, which will make an interesting detail shot when the house is published.

In these cases, or a hundred like them, the client fails to see or understand because he hasn't the same vision or perception as the architect; it may be almost impossible to explain these things to him, and in the end, unless he is quite determined, he may conclude simply to take them on faith.

It may be worth remarking that there is no reason why the client should have the same perceptions as the architect, nor much possibility that he ever will have. On the other hand, he has his own, whether or not they are represented in the completed house.

This, then, is a plea for every client articulate enough to express definite likes and dislikes. In matters pertaining to what might be called the more scientific aspects of design he probably will be happy enough to accept the recommendations of his architect; but when it comes to surface things — the things he will see and touch as he moves about his house — perhaps that is something else again. This phase may constitute a challenge to the modern architect which he should go out of his way to accept.

The layman's attempt to express what he wants in the way of materials, textures and colors may not be as accurate as he believes it to be, but it should furnish the architect with valuable data. For example, the client says he wants to use brick for the exterior, and his wife wants wallpaper in the living room. The architect's own ideas on both, let's assume, are diametrically opposed. If there is to be a compromise, what will be the architect's aim — to persuade his clients as nearly as possible to his own scheme, or to see what lies beneath this apparent hunger for brick and wallpaper, and what can be done to satisfy it?

This is not to suggest that the contemporary residential architect should further burden his already difficult and none-too-remunerative task by adding to it the duties of a neuro-psychiatrist. Rather, it intends to raise the question whether the design of modern houses is not drifting into a state of undue concern for what the profession will think, and a considerably lesser concern for the reactions of the public. Can it be denied that our modern houses are already developing their own set of clichés? Can it be denied that certain materials with a reputation for having a "fresh, modern look" are preferred over those which are associated with the past? And some of the "inventiveness" in modern design — doesn't it occasionally come closer to self-conscious trickiness?

But perhaps of greatest significance is the way the field of design of modern houses seems to be narrowing. Take a half-dozen magazines showing collections of modern houses, and glance through them briefly. With a few exceptions, isn't there an alarming sameness in the general character of the designs? It is almost as though our contemporary architect already had succeeded in shackling itself with a set of rules which few right-thinking designers will disregard. Admittedly, the individual results are good, and perhaps this concentrated development of a type has something to do with the notable progress that has been made during the past couple of decades; but some will pause to consider why, for example, the modern remodeling of a well-built old barn can give us so much pleasure. Even if the correct answer goes no deeper than "it's fun for a change," that may be deep enough.

One wonders if the taste for adventure, for exploration and discovery, which was such a potent, ebullient force in the widespread development of our contemporary architecture — and which certainly seems very much alive today — is not being diverted to comparative trifles (screens, mechanical details, odd bits of furniture, etc.) while the larger opportunity is channeled into an accepted pattern which has been proved functionally sound — and perhaps attractive to magazine editors.

Perhaps the design of our contemporary homes would benefit by the development of some new sources of inspiration. The example and teaching of distinguished

Hornbostel (pp. 114–115)

Peterson (pp. 105–107

architects has been one such source; the use of new materials and technics has been another; and the various components that go to make up "regionalism" have perhaps constituted a third — though its influence may fall considerably short of its publicity. In all three cases, large groups of architects, though working separately, have in effect been moved by the same force or forces and have traveled in the same general direction. In view of the great strides that have been taken in this manner, it might seem prudent to leave well enough alone; but the purpose of this article — even at the risk of being imprudent — is to nominate the client as a potential new source of inspiration.

True, he has been an important factor all along; but often more as a maker of footstep patterns, a begetter of so and so many children, an animal with certain storage and entertainment problems, and with certain budgetary limitations. These and other items concerning him are carefully weighed, and the resulting plan is not only nicely suited to this individual, but on that very account often reflects a comparable degree of individuality itself. What then might result if a little more attention and consideration were to be given to the plain, human likes and dislikes of the client, whenever they can be ascertained? Has modern design come of age sufficiently to be more generally helpful to the woman who, say, expresses a preference for a frilly sort of bedroom? The problem of creating contemporary versions of the thoroughly feminine environment ought to be an attractive enough challenge. And yet how many modern dressing-rooms we have seen that exhibited the same charm as a fitting room at an exclusive men's clothier's. Perhaps, in these cases, the ladies wanted it that way.

Generally speaking, the public might be divided into three groups, according to the degree of their receptivity to contemporary home design. The first group is enthusiastic about everything modern and pretty much wants the full treatment. The second group has reached the more cautious conclusion that the traditional house is not suited to these times and that only a good modern architect can solve their problem; but they are looking for the practical, provable advantages and may quarrel with some of the esthetics. Then there is the third group, probably larger than the other two combined, which for reasons that seem to be largely emotional, will not willingly enter the office of a contemporary architect. We are not concerned here with Group A; but if the fears and fancies of Group B could be a little more sympathetically handled — within the framework of good contemporary design — it seems likely that Group C would come around much sooner than can otherwise be expected.

None of the above must be construed as suggesting that the standards of integrity associated with modern design should be relaxed. It still seems admirable and sensible that an architect should withdraw from a commission rather than make himself responsible for a design which does not fairly represent him. Nor is it denied that the work of a good architect is bound to bear the stamp of his personal vision or genius. What we are here concerned with is the application of the architect to the client, not his subordination.

Without laboring the point unduly, it seems reasonable to hold that the best assurance of the continuing virility of contemporary house design lies in the sanest and most understanding relationship of the architect to his client: and that the most dangerous turn our architects might take, in this respect, is to accept any current vogue as the only right direction.

There are so many areas still unexplored, so many directions in which the creative mind could dare to move; and perhaps those that seem least spectacular when judged beside today's most publicized creations ultimately will prove to be made of more vital stuff. There is always room on the contemporary scene for a few more iconoclasts, a few more people who make their own rules as they go along. To any who are so moved, we respectfully propose the client — with all his faults — as a most fruitful, pertinent and truly contemporary source of inspiration.

— A. McK. S.

Roger Sturtevant Photos

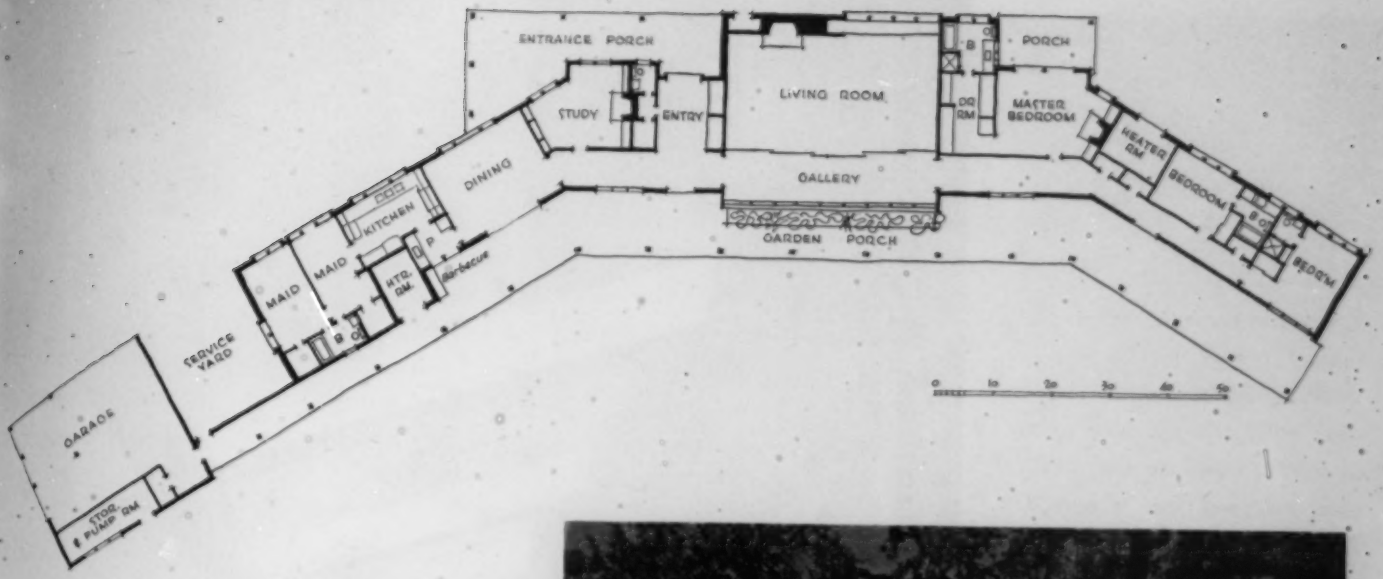
A LARGE SMALL HOUSE IN STOCKTON, CALIF.

Joseph Esherick, Architect

THE site of this house for Mr. and Mrs. Harry Holt is in the ranch country of the San Joaquin Valley where the climate and various factors incidental to it afford the architect some interesting problems. Summers are intensely hot, and winters cold and raw, especially when there is a fog. Prevailing summer winds are westerly, and there are occasional cold north winds in winter, but these usually blow on clear, sunny days and, if protection is provided, sitting outdoors is pleasant. The shallow, U-shaped plan, suggested by the clients, was adopted by the architect as desirable, since most rooms would get the advantage of the cooling west wind on summer nights, and the house, facing southeast, would provide shelter on the garden side from both west and north winds.

In order to avoid movement of the foundation in a very unstable soil, concrete piers on 10-ft. centers were extended 6 ft. below grade to stable soil, and support a reinforced concrete beam at grade level.

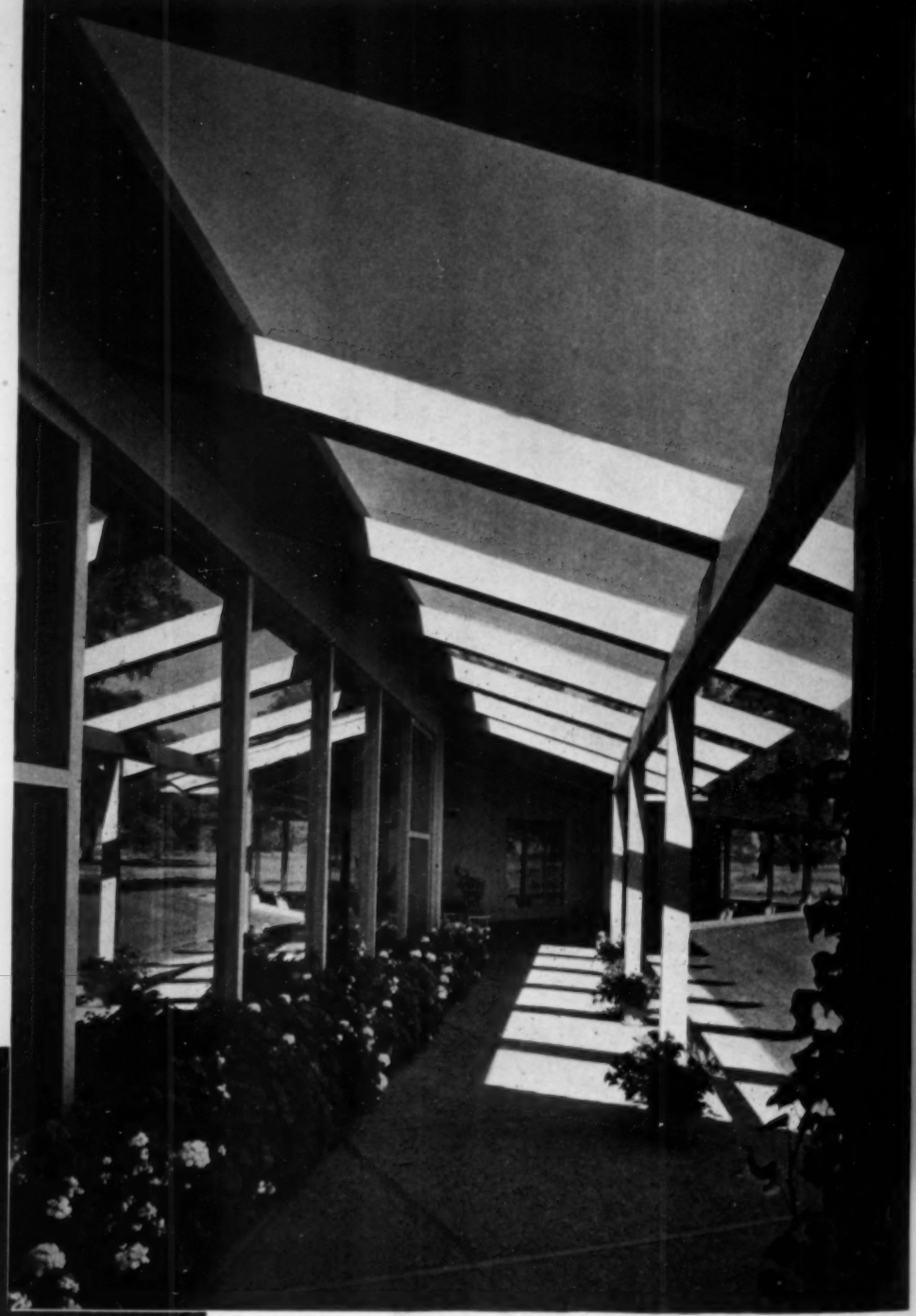
Following a current trend to large houses of few rooms, reducing the help problem to a practical minimum, the Holt house is also, in this respect, a return to an early California tradition and a reminder that sound ideas are apt to reassert themselves.



In plan above, note flexibility of heating afforded by independent forced warm air units in each wing, supplemented by fireplaces in three center rooms. At right, the entrance porch; below, the garden side, seen from the bedroom wing. Soffits and roof beams are gray-green; redwood siding, sash and trim are buff, to match brick

Roger Sturtevant Photos

The garden porch, at right, is paralleled indoors by the gallery shown below; through the sliding glass partition is the living room. In order to admit the sun to this area, the porch roof is omitted. All porch floors are exposed-aggregate concrete with redwood division strips.

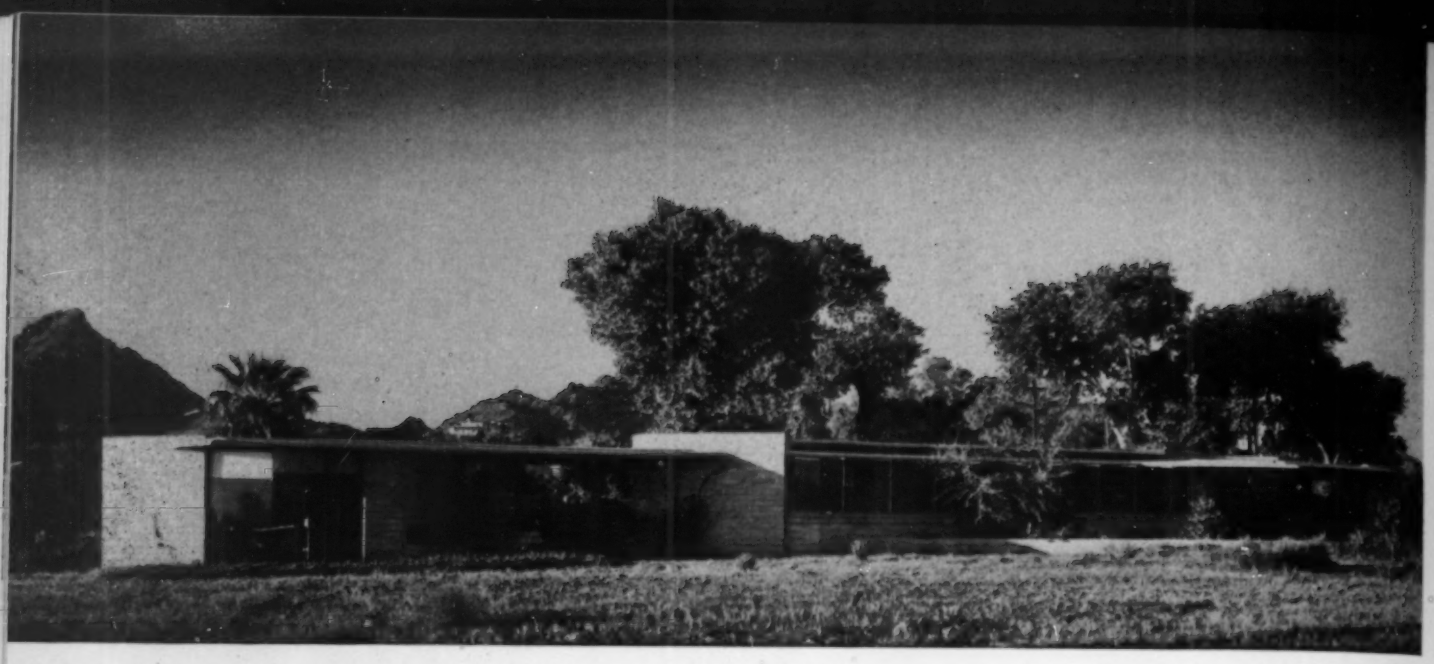


Above: the upper chords of the trusses extend out to carry the overhangs and porch roofs. The roof is 2 by 6 plank laid over the trusses and covered with asphalted felt, over which was laid 1 by 4 stripping for the redwood shakes. Because of the low pitch of the roof, the shakes were interlaid with 15-lb. felt strips. No additional insulation was used, but hot-weather performance has been excellent. Right: living room, from the gallery

The dining room is designed as an inward extension of the dining porch. Because of the prevalence of warm weather, every effort was made to achieve a cool, fresh feeling; hence the generous proportions of the rooms, the relatively high ceilings, the occasional introduction of plan material, and the green tile floor which, extended into the gallery, entry and hall, also defines the circulation area. The dining table is composed of two independent units to facilitate moving indoors or out, as desired

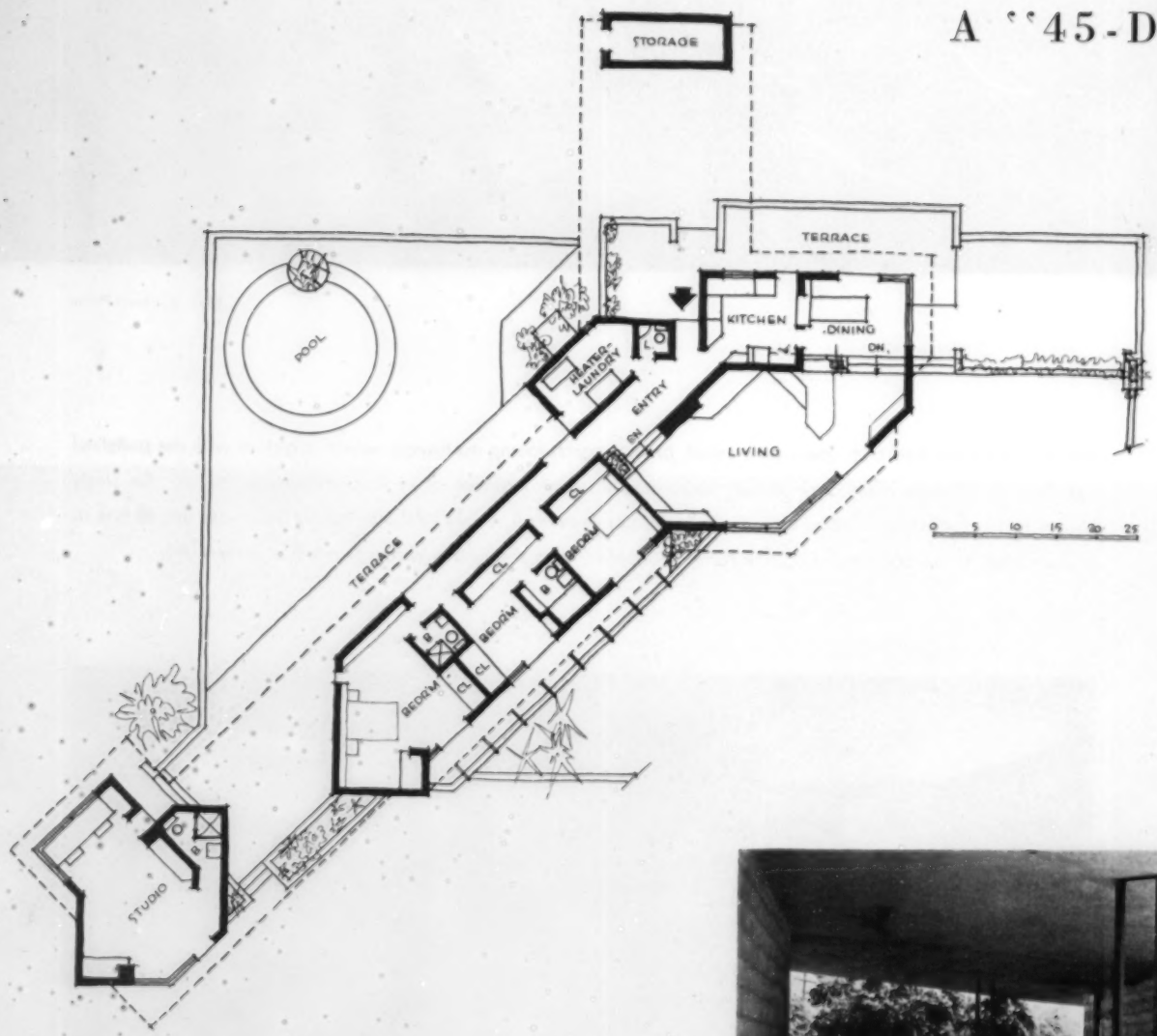
Roger Sturtevant Photos

Above: the master bedroom opens on a small, private porch facing northwest, which, together with the polished oak floor and beige walls and ceiling, helps create an atmosphere of cool spaciousness. Below: the study houses a gun collection, a small bar, and, on the opposite wall, books. All interiors in the house are of oak or gypsum board, the oak sealed, glazed and lacquered, and the board either painted or enameled



Julius Shulman Photos

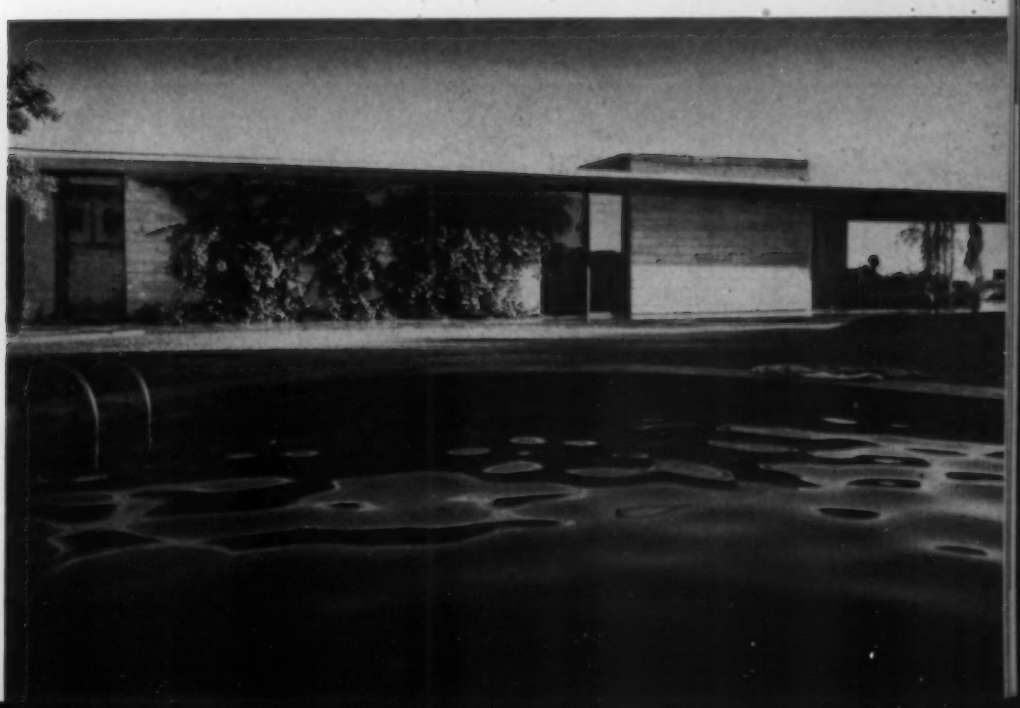
A "45-DEGREE



PLAN'' IN PHOENIX, ARIZONA

Blaine Drake, Architect and Owner

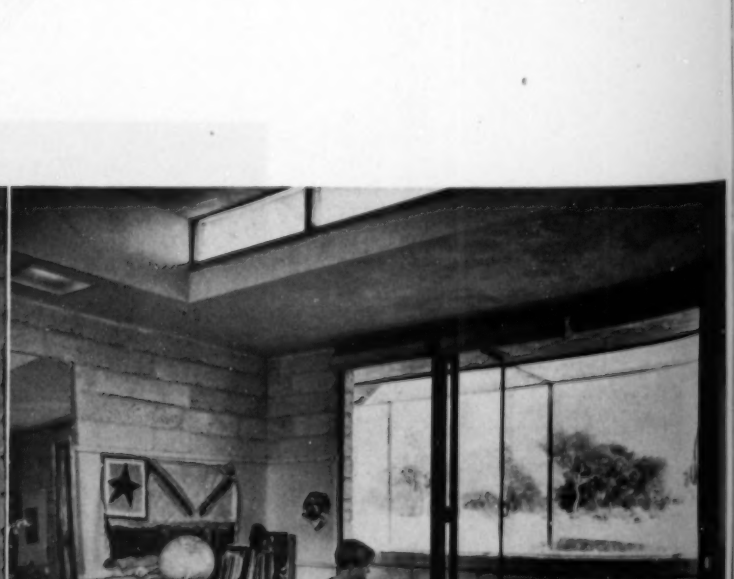
A 1½-ACRE, corner lot, with the long side running east-west, is the site of this home. In order to give maximum privacy from both streets, the driveway is cut across the corner of the lot, through the covered entry, leaving a triangle which is filled with protective planting. The house is spread out to get the southern sun in all rooms, and the undesirable western exposure is avoided. The covered area between the house and the studio forms a wind-scoop in direct line with the prevailing southwest breezes. The block material, which is used untreated for both exterior and interior, is compounded of portland cement and an aggregate of aluminum silicate, expanded by heat. Light in weight and easy to handle, it also has high insulation value. Above: left, southwest view showing studio, breezeway, bedrooms and living room; right, from southeast.



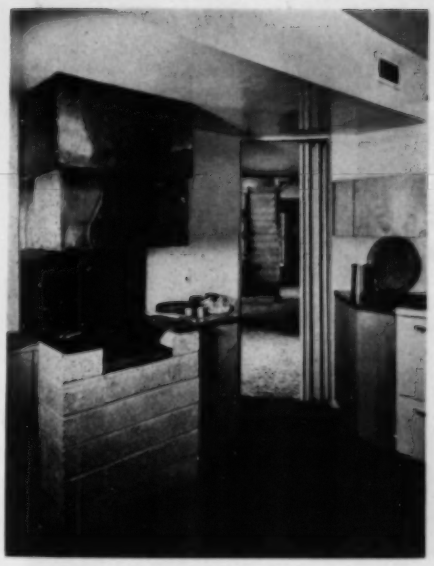
Left: sitting porch between studio and master bedroom is centered on the circular swimming-pool seen in the background. Right: swimmers' view of north elevation

The living room, above, is at a lower level than the rest of the house, due to the slope of the property; at the opposite end of the house, the studio shows the same condition. Throughout the house the expanded aluminum silicate block, which is a soft, light gray in color, is used untreated. The same aggregate, mixed with plaster, is applied to ceilings; floors are integral-colored concrete. The radiant panel heating system in the floor is supplemented by an air conditioning system with evaporative-type air cooler for summer use. Below: left, a corner of the owner's studio; right, the children's room, showing screened terrace beyond.

Julius Shulman Photos



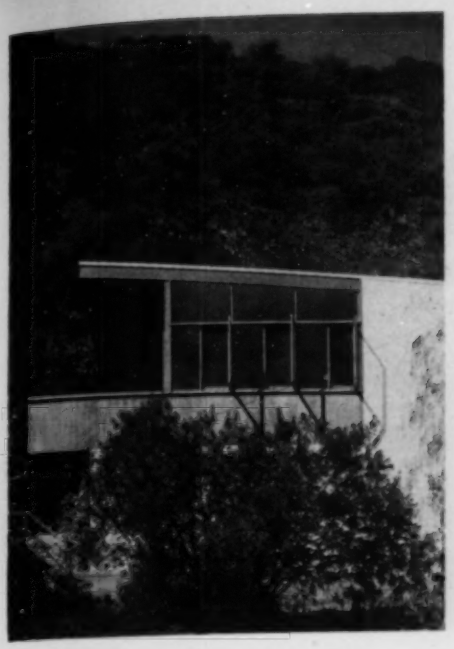
The dining room and dining terrace, seen at left and below, occupy the eastern end of the house. Table-height serving counter extends through pass door to kitchen, as do cupboard shelves above. Left center: folding door screens kitchen from entry



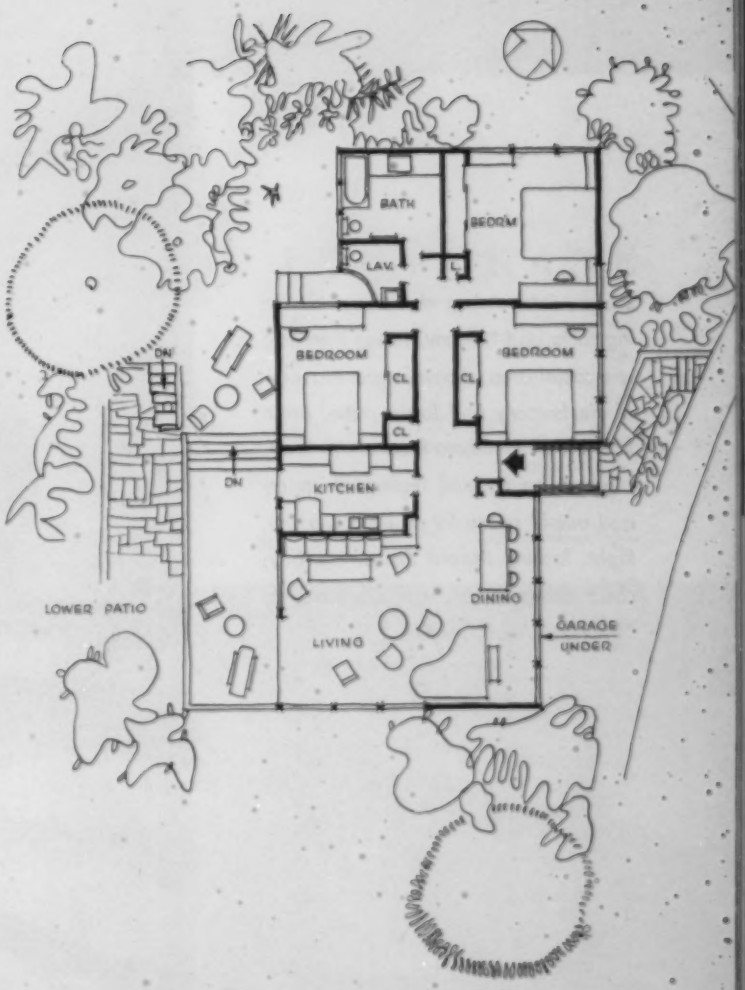
Left: master bedroom. Luminous panels at ceiling height provide general lighting. Fireplaces are useful before heating system is needed

Julius Shulman Photos

HOUSE IN BEVERLY HILLS,



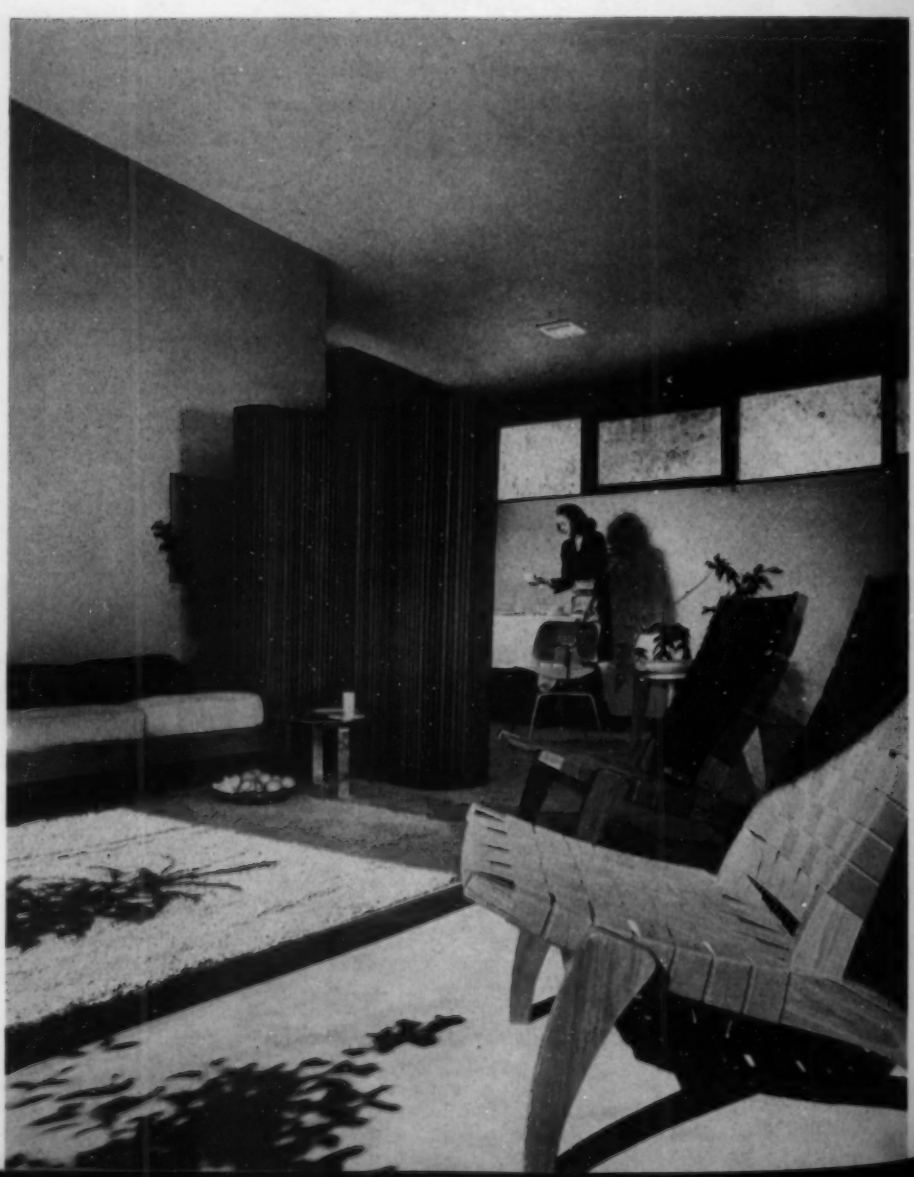
Of the site, Mr. Neutra says: "The greater portion of the property comprises steep slopes covered with the characteristic California elfin forest, fragrant and, in season, of lovely bloom. The buildable ground is restricted but endowed with a delightful view down the valley." As seen in the photographs, "restricted" is by no means an overstatement of the condition; but Mr. Neutra invariably seems happiest with a site that would scarcely afford footing to a mountain goat. Here he has provided his clients — Mr. and Mrs. Sinay — with a compact but comfortable and convenient house which appears never seriously handicapped by its situation and which capitalizes on every advantage of the precipitous slope. A single entrance serves all purposes, although the patio and balcony can be reached from the outside, around the south corner; the smaller of the two bathrooms has a secondary access from the back lawn. Winter warmth is provided by radiant panel heat installed in the ceilings; other coils, embedded in the projecting roof overhang, make the balcony more usable in the evenings. Exterior materials are cement plaster and redwood, with some combed plywood along balcony and windows.



CALIFORNIA

Richard J. Neutra, Architect

Julius Shulman Photos



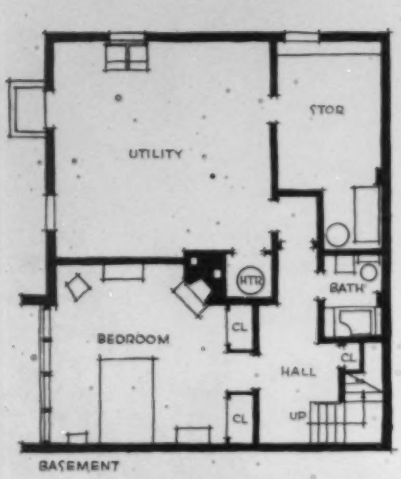
Above, left: sliding doors connect living room and balcony, fusing them into one social area. Above, right: this view of the balcony and lower patio, taken from the intermediate level of the lawn, suggests an unusual feeling of variety and ample space for so limited a site. Right: looking toward the dining bay; chair designs were commissioned by Neutra to Allan Gould

ARCHITECT'S HOME IN SPOKANE

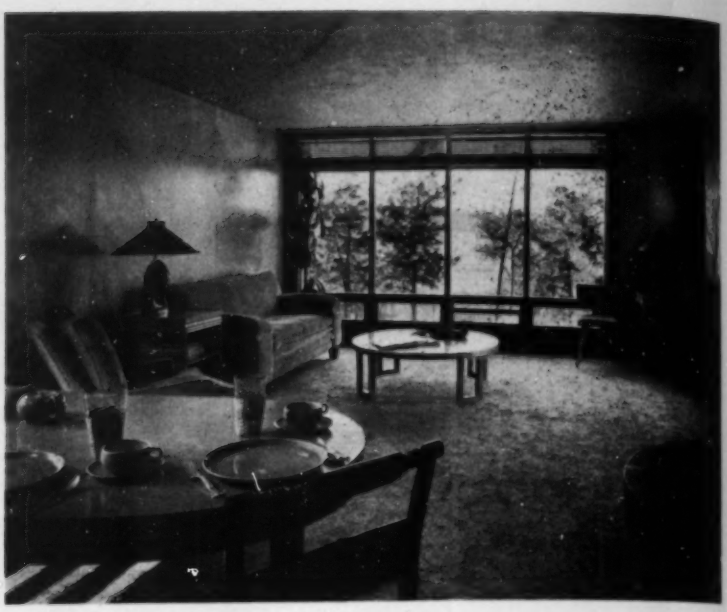
E. J. Peterson, Architect

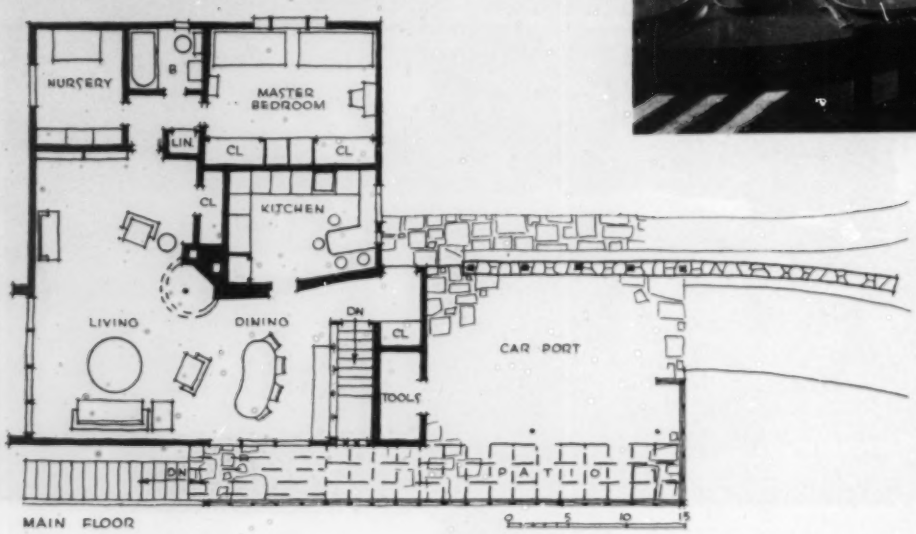
Dearborn-Massar Photos

THE location is a sloping, northwest corner lot, overlooking a broad, deep valley. In addition to providing a home for the owner, his wife, and their one child, the aim was to make the enclosed space flexible enough to accommodate occasional large gatherings as well as the everyday activities of family living and hobbies. Exterior materials, reflecting the region, are: vertical white pine siding, left natural, and painted white pine trim. The carport wall, extending well out along the driveway, is native stone; foundation is concrete block. The driveway is electrically radiant heated, while a sprinkler system on the roof helps to insulate against summer heat.

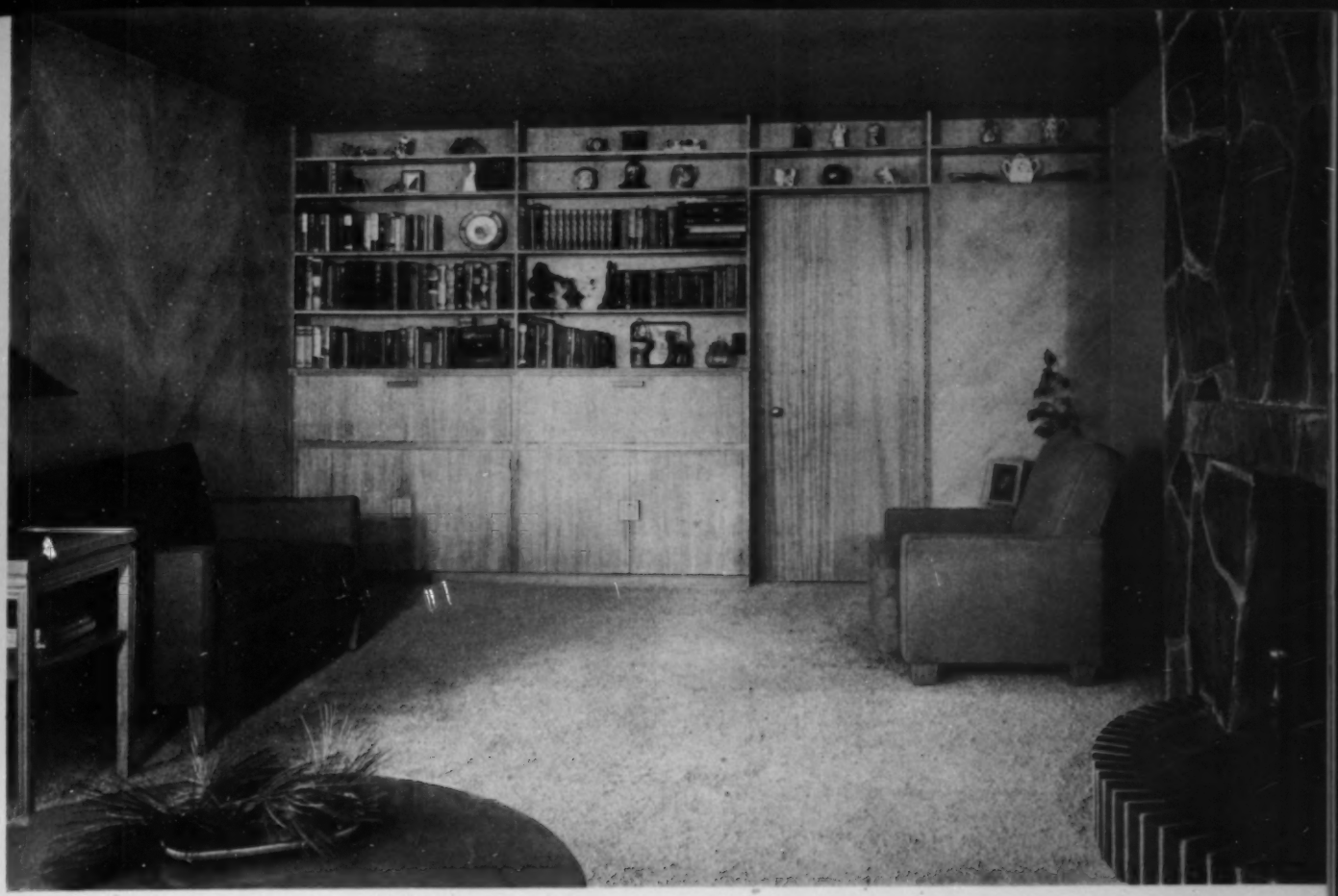


BASEMENT

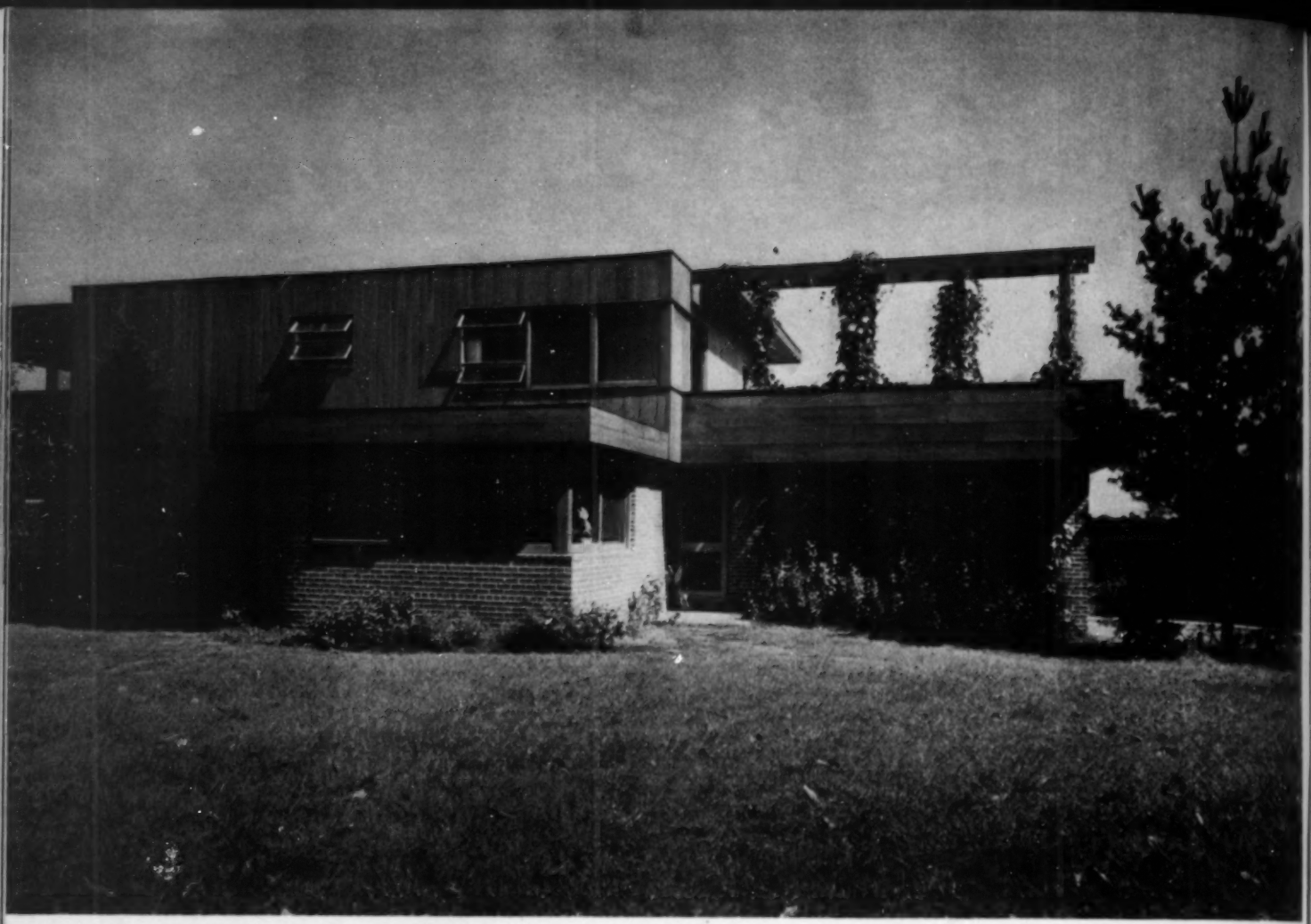




MAIN FLOOR



Mr. Peterson's occasional need for space to accommodate large gatherings doubtless was a consideration in planning the end of the living room seen above, which might otherwise seem somewhat wasteful. Walls are paneled in mahogany, and the fireplace — built on a corner and supported on a central post — is stone veneer. Below: louvered shutters afford privacy, and protection against the sun. The ceiling above the breakfast bar is electrically radiant heated. Plan shows full use of basement, permitted by sloping site



Billy Glenn Photos

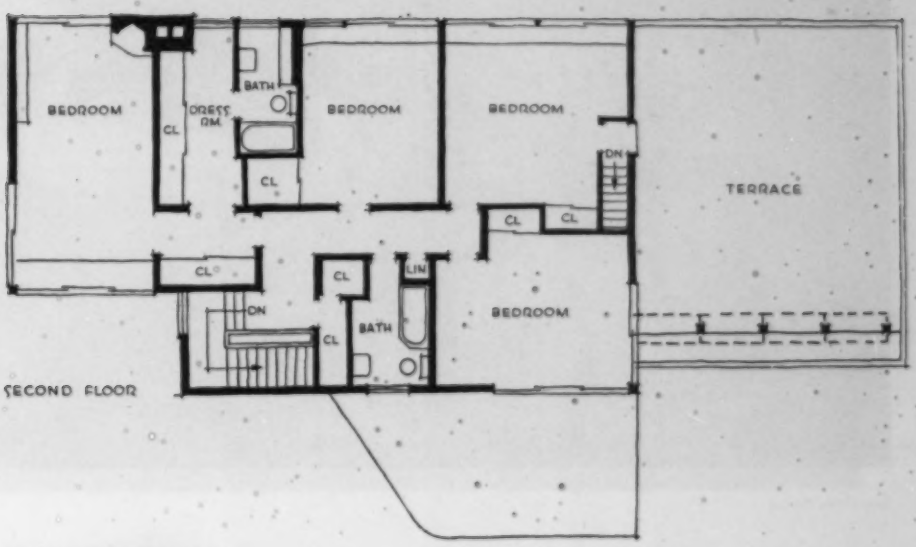
HOUSE FOR AN IDEAL SITUATION

Residence in Haddonfield, N. J.

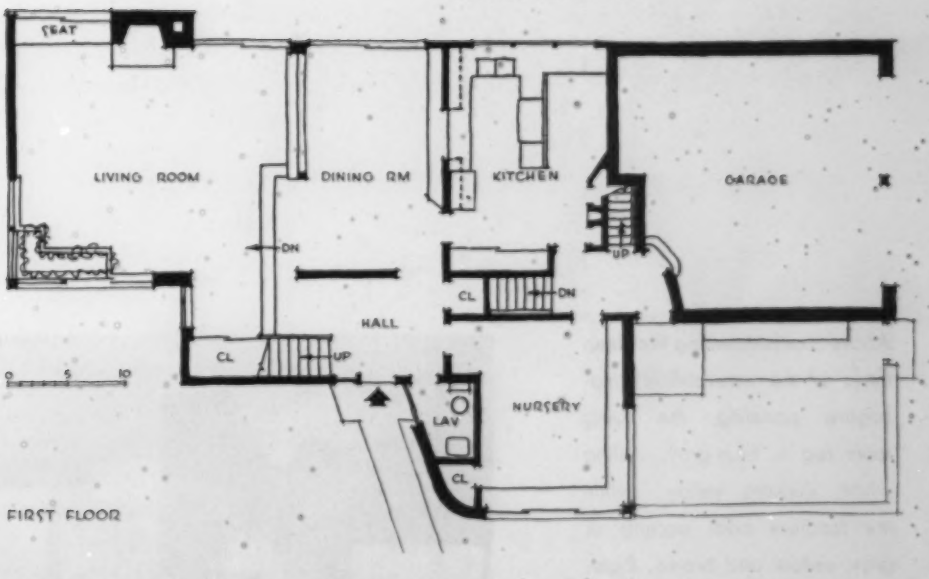
George Daub, Architect

HERE is a case in which the clients, a young couple with three small daughters, approached the architect with a problem which may be considered fairly ideal. The site comprised many acres of sloping ground in open country; there are fruit trees, pasture and a wood lot with a creek running through it. They were content to let the site be the major influence in the design of the house, wanted a house for modern living, and made no stringent demands except that every consideration be given to provision for the upbringing and supervision of the children. Accordingly, the house was located on a slope and oriented to benefit by all the summer breezes. Entrances are on the uphill side, and the "basement" recreation and maids' rooms are fully above ground at the rear. On the first floor the children's nursery is easily supervised from the kitchen and has ready access to the outdoors. Upstairs, the children's rooms open on a roof terrace at the southeast end of the house.

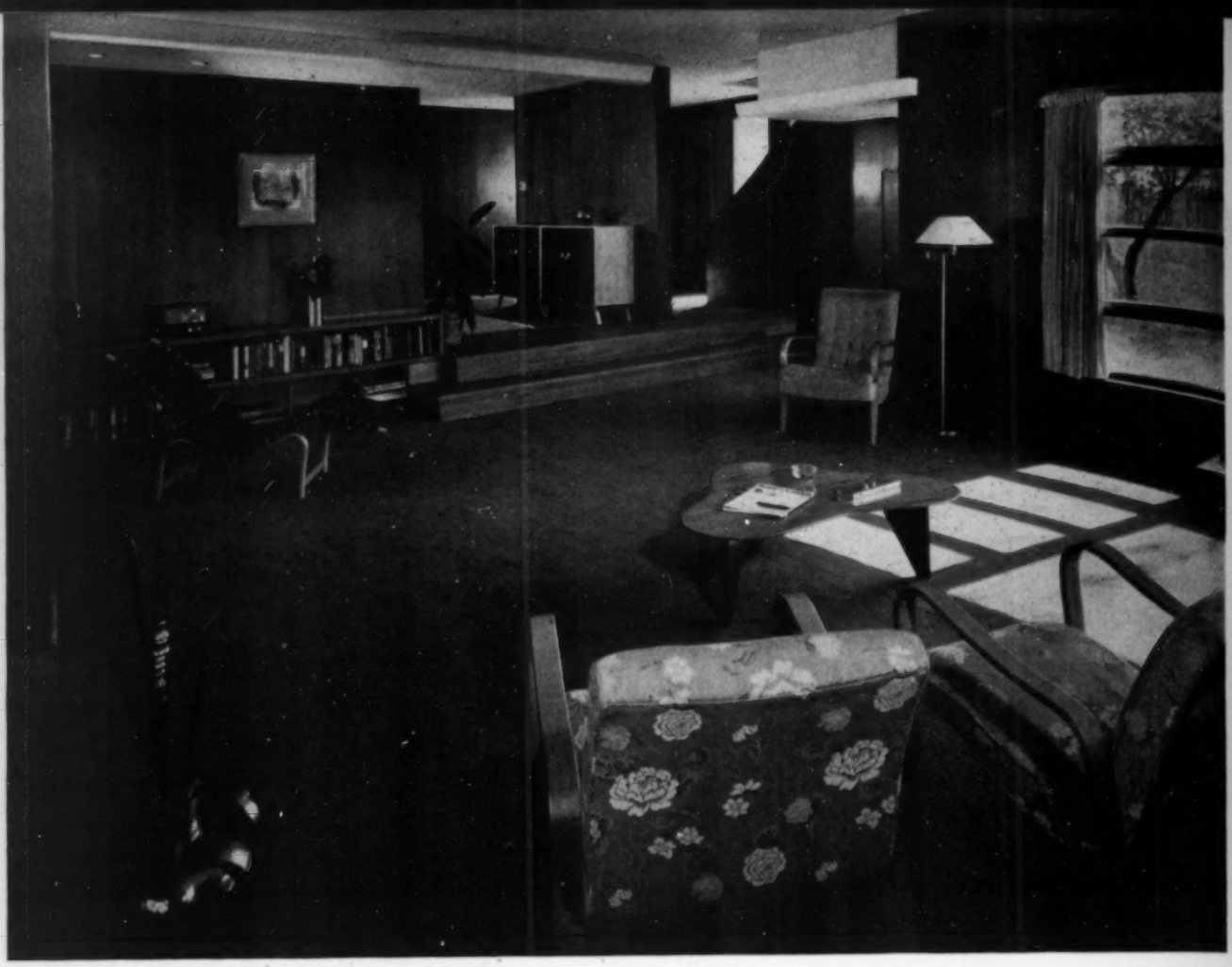
The heating plant is on a two-zone system for the two long sides of the house, with indoor-outdoor controls. Almost all radiators are concealed behind the sliding doors of built-in cabinets which range along the windows under a 20-in.-wide window sill. The house is designed to catch solar heat in the winter months. Construction is wood frame on a concrete block foundation, with brick veneer and stained cypress siding as the exterior wall materials.



SECOND FLOOR



FIRST FLOOR



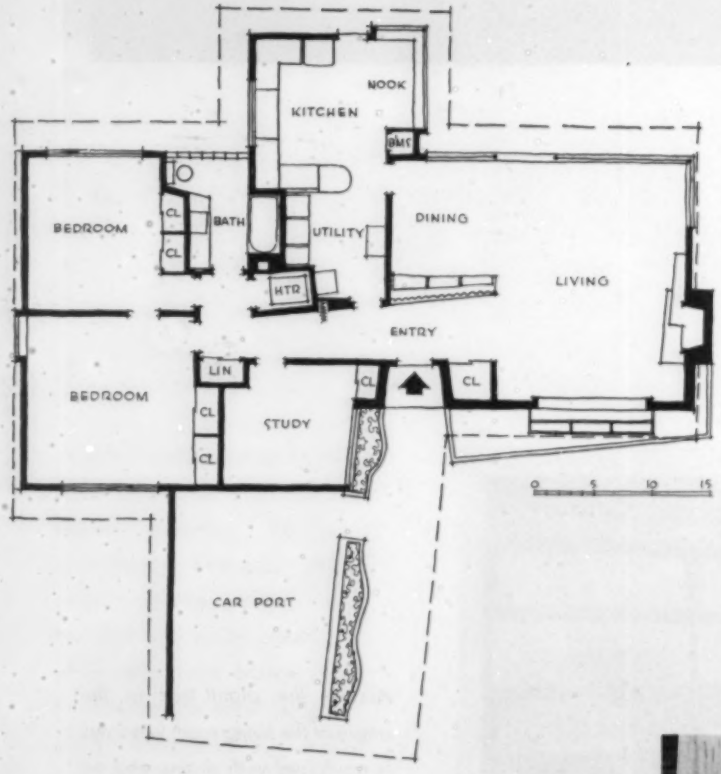
Billy Glenn Photos

Above: complementing the deep tones of the natural-finish mahogany paneling, the living room rug is blue-gray, ceiling white, curtains yellow, while the furniture adds accents of gray, yellow and brown. Right: the partition between living and dining rooms stops 18 in. below the ceiling and affords concealed indirect lighting to both

Above: the plant box in the angle of the living room windows is equipped with drains and an automatic water supply; radiators are behind it. Left: natural birch plywood is used for kitchen cabinets, which were built on the job. Work surfaces are red linoleum, walls yellow, floor tan. The pass-door opens on the dining room counter, seen opposite

Chas. R. Pearson Photos

MODEL HOUSE



As the key exhibit in the Seattle Home Show, this house may be considered indicative of an interesting shift in the public's taste in "model" houses. There is the further significant fact that the wide range of contemporary materials employed in its construction are given a far more convincing and dramatic showing than would be the case in a building of more conventional design. Following its exhibition in the Seattle Armory, the

IN SEATTLE, WASH.

Lawrence & Hazen, Architects

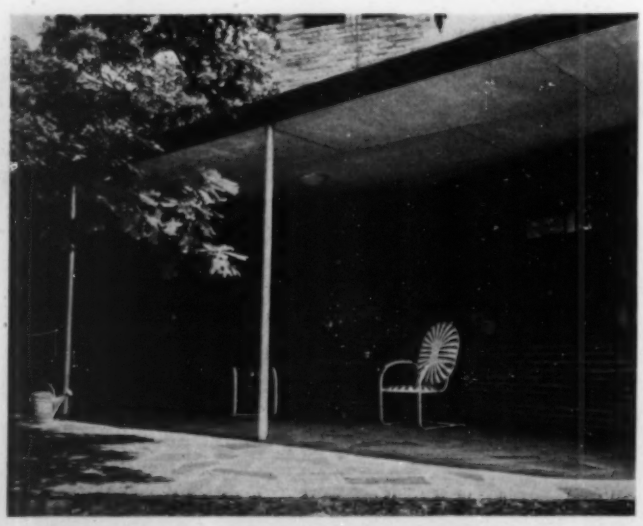
house was rebuilt in a suburb of that city. Exterior materials are V-jointed cedar siding and Roman brick veneer, aluminum and wood sash, and a roof of hand-split cedar shingles. In the living room, shown above, walls are walnut plywood, ceiling acoustic tile and floors carpet-covered fir plywood. As seen in the bathroom and elsewhere, glass in many forms — brick, figured, reeded and clear — gives a lift to the interiors.

The glass screen and counter between the entry and the dining room is set at an angle which defines the circulation and which, incidentally, adds several feet of apparent length to the bedroom hall

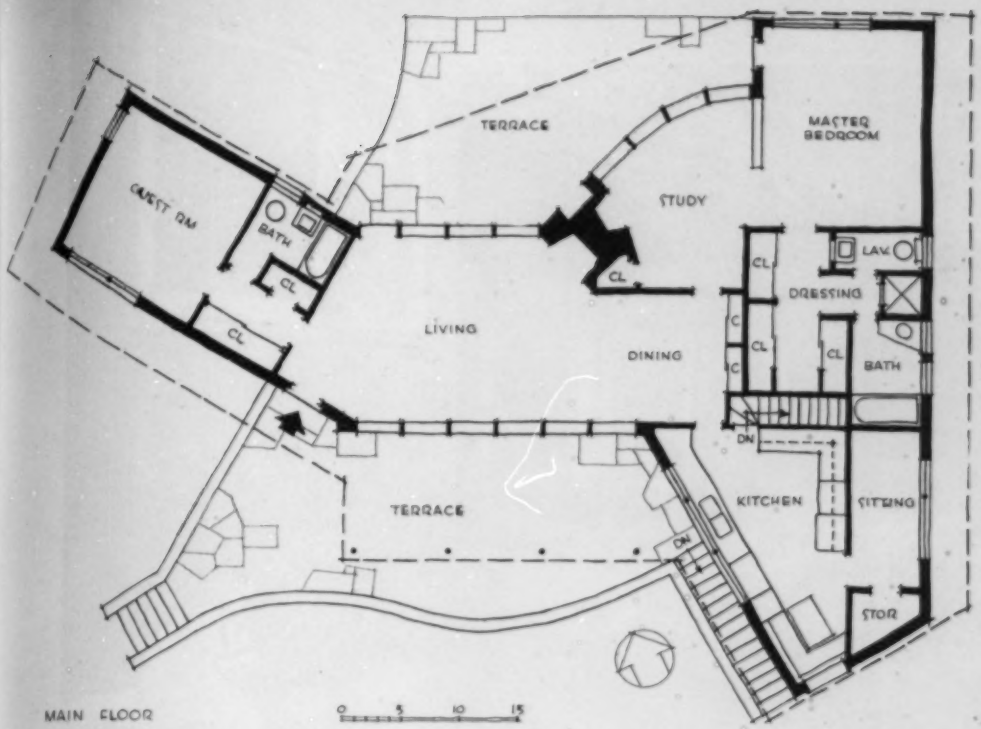
Suzanne Szasz Photos

RESIDENCE FOR MR. BENJAMIN GOLDWASSER

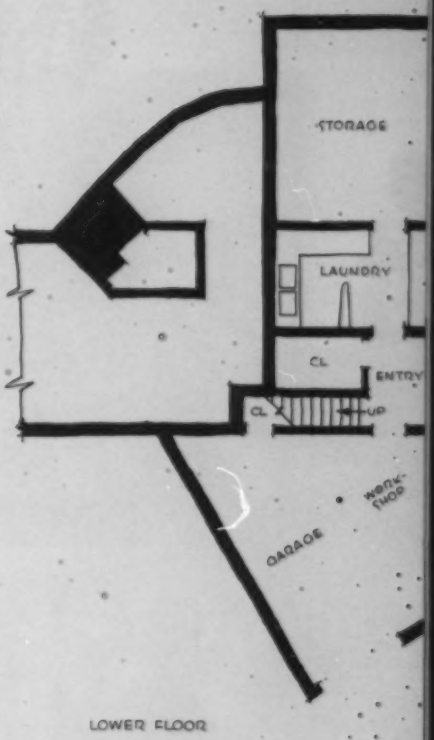
Mamaroneck, N. Y. ***Caleb Hornbostel, Architect***



GIVEN a pleasant, rolling site, and a building budget which does not unduly restrict the architect, the planning of a small house can yield some interesting and original results. Here, for example, the house was fitted to the contours and orientation, despite the necessarily elaborate foundation plan which that involved; and, freed from bondage to a minimal plumbing layout, the plan could dispose itself in a manner dictated by use and convenience rather than by strictest economy. Exterior is brick veneer on concrete block footings to the level of the main floor, which is concrete slab. There is radiant panel heating in the ceiling of the main floor and in the floor of the basement; an exhaust fan with ducts supplies summer cooling. Finishes include oak floors, birch plywood walls and doors.

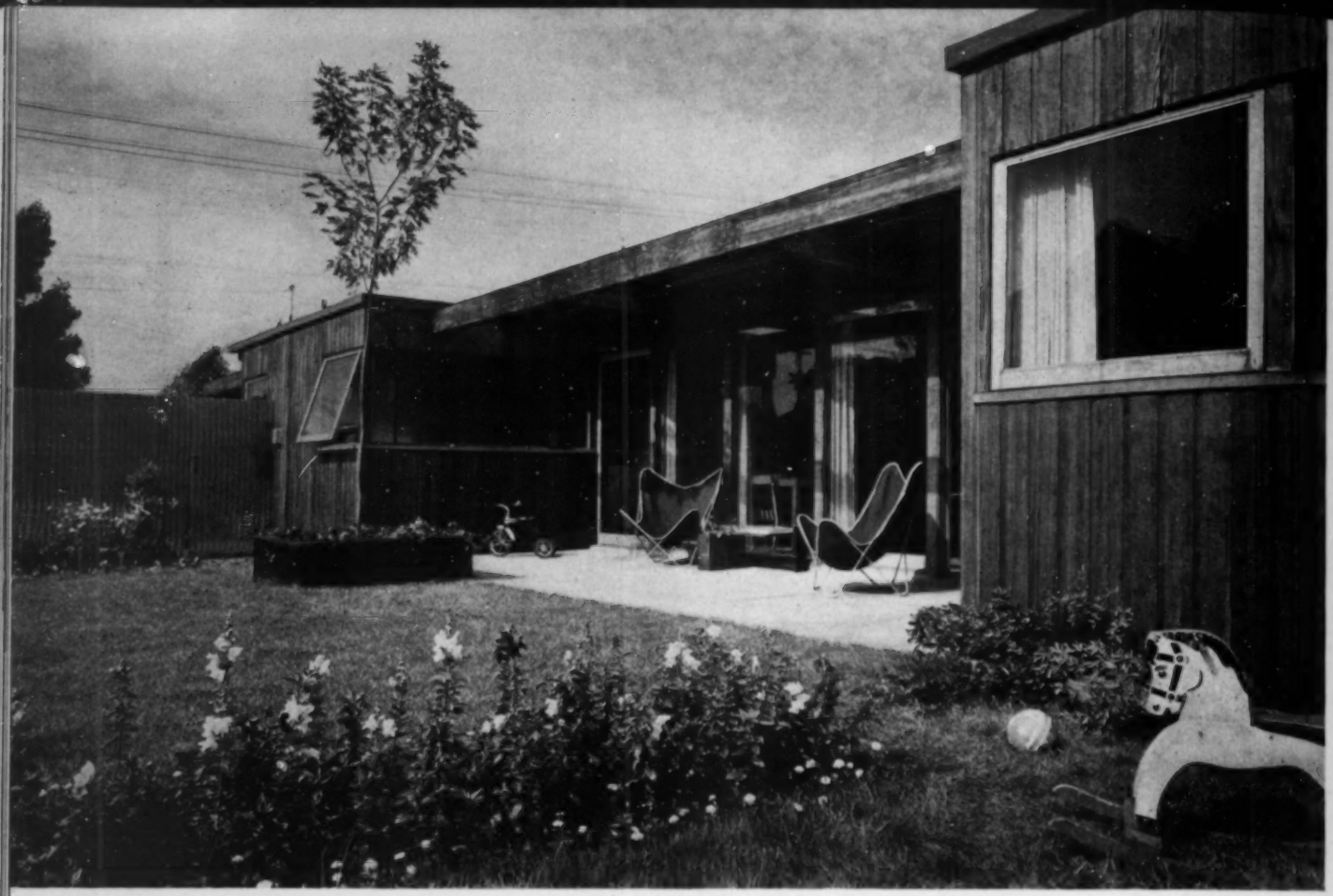


MAIN FLOOR



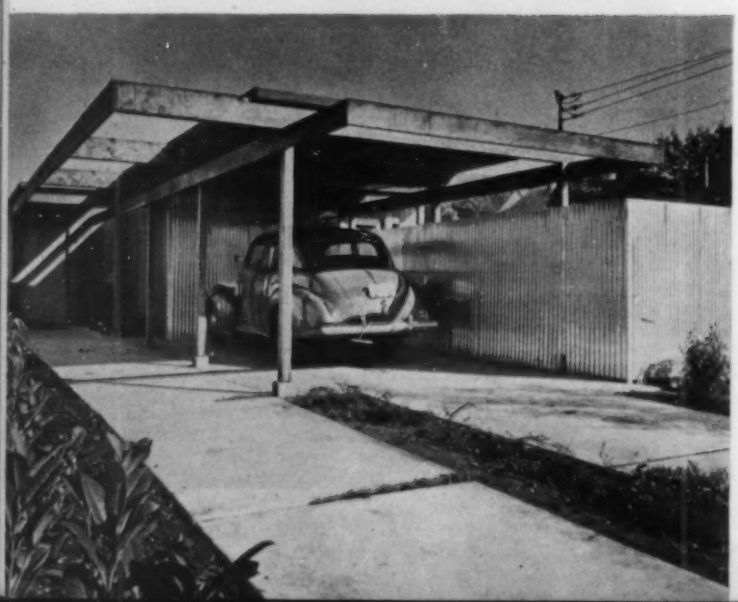
LOWER FLOOR

Below: the dining end of the living area, showing at upper right the clerestory window. Right: the north terrace, seen from the kitchen. South terrace, with outdoor fireplace, is shown opposite



A COMPROMISE, BUT A REALITY

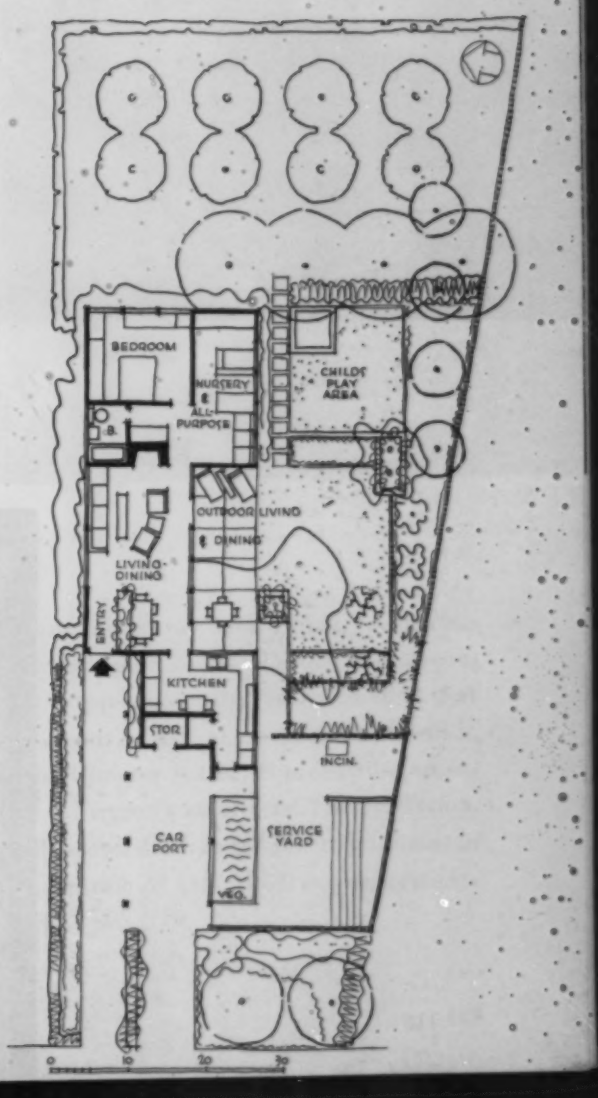
House in Berkeley, Calif. *Roger Lee, Architect*



IN urgent need of a home, yet aware that high building costs would prevent the realization of many personal and special requirements, Mr. Lee attacked his own postwar housing problem from the standpoint of satisfying only the simple, immediate needs of his wife, small son and himself. He felt that their basic requirements for good living were: privacy from the street and neighbors, solar heat, indoor-outdoor living, an area for the children, some place for overnight guests, general control of family and social activities from the kitchen, and possibly morning sun in bedrooms and kitchen. The house was to be placed on a 40-ft.-wide, long, level lot, flanked by existing houses, and having the south exposure along the side.

Roger Sturtevant Photos

Walls and ceilings of living-dining space are redwood siding, as is the exterior; floors are asphalt tile on concrete; frame is 4- by 4-in. posts on 8-ft. centers. The 4-ft. module is also used as the basis for the landscape design. Above: a light trough runs along the large windows, and a concealed door next to the fireplace leads to the bedrooms. Below: a coat closet, 6 ft. high, screens the dining space from entry



Right: the all-purpose area functions variously for study, sewing and rainy day play. By means of sliding doors it can also be arranged to take an overnight guest

Roger Sturtevant Photos

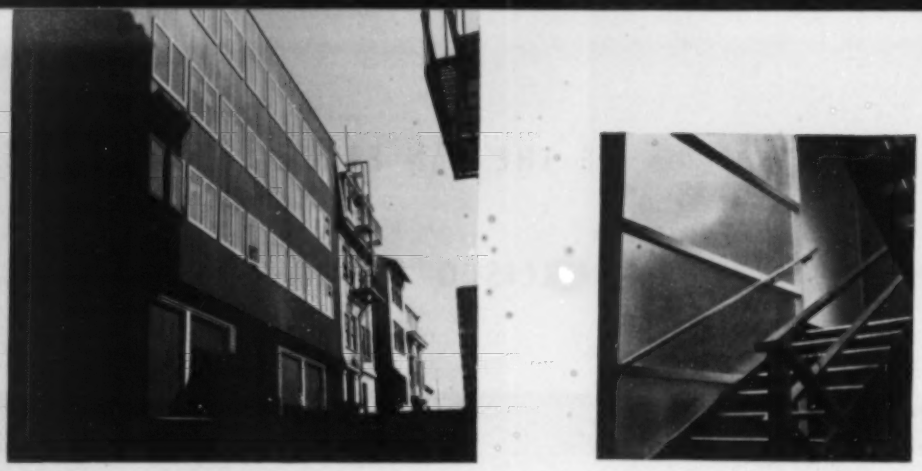
Below: the sunny kitchen, like a control tower, affords supervision of all traffic in and around the house. The living-dining area opens directly on its outdoor counterpart which has maximum exposure to the south, yet is protected from southwesterly ocean winds. Left: in owner's room, sand-blasted glass panels provide light for the dresser and small lounging couch. Curtained windows get morning sun

DOMESTIC ARCHITECTURE OF THE SAN FRANCISCO BAY AREA—

EXHIBITION OF THE SAN FRANCISCO MUSEUM OF ART

Moulin Studios Photo

THERE is about the residential architecture of the Bay Area a quality which has long made it remarkable to the architectural profession and which has more recently been noticeable to laymen. It is not surprising, for that reason, to find that the progressive-minded San Francisco Museum of Art, at the request of and in collaboration with the Northern California Chapter A.I.A., is presenting an exhibition of representative current work of the region's architects. The exhibition, opening this month at the San Francisco Museum, will be available to museums in other parts of the country through the Federation of Arts which is sponsoring its national circulation for the next two years.



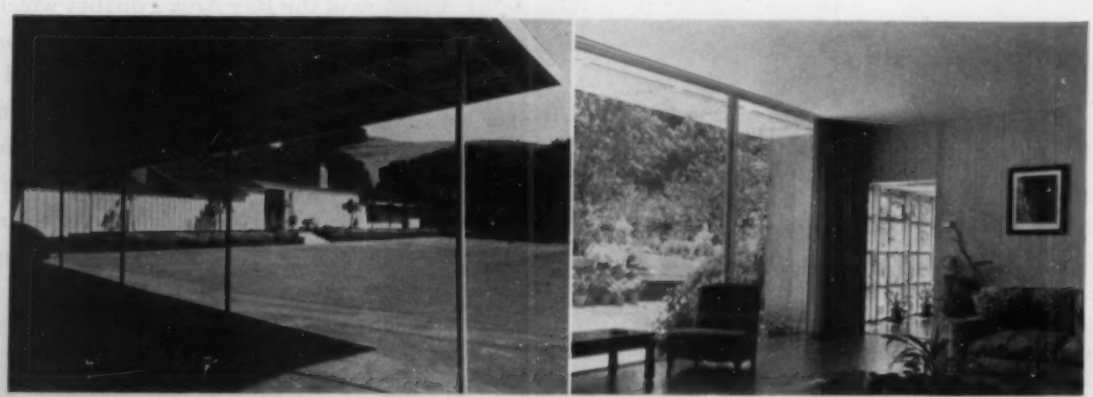
John G. Kelley, Architect. Apartment house, San Francisco, Calif. Staggering floor levels of the two units allows the stair to span from one level to the other in a simple manner

Moulin Studios Photo

The factors which enter into the quality of the Bay Area's domestic work are both contemporary and historical; contemporary in that the work represents the personality of the individual architect, historical in that it partakes of a tradition that began with the days of California's Spanish settlers. In a sense, too, the former is possible because of the latter. The West has always drawn the bold, the adventurous, the imaginative, and these traits have become characteristic of western attitudes and western products, among which can certainly be counted its architecture.

The character of the architects who focused attention on the Bay Area in the early days of the century because of their fresh approach to old problems is a part of the background of this exhibition, but so are the people of the area. In them, too, was the spirit of adventure, the open mind, the willingness to accept the new and different. As a result, one finds Bay Area houses built fifty years ago

Eldridge T. Spencer and William Clement Ambrose, Architects. Residence for Mr. and Mrs. G. M. Greenwood, Orinda, Calif. This house opens to morning sun and surrounding hills



Kutt E. Ostwald Photos

Confer and Ostwald, Architects. Residence for Mr. and Mrs. Garrett, Contra Costa County, Calif. Wings define outdoor areas. Masonry adds warmth of color and texture

Alton S. Lee, Architect. Residence for Mr. and Mrs. Alton S. Lee, Alameda, Calif. The L shaped plan creates a private garden on which open large glass wall areas

Wurster, Bernardi, and Emmons, Architects. Residence for Mr. and Mrs. M. P. Davison, Fresno, Calif. A compact plan recognizes climatic assets and liabilities

Roger Sturtevant Photos

Roger Sturtevant Photos

Photo Craft Shop Photo

Moulin Studios Photo

Above right. F. A. Lockwood, Architect. Residence for Mr. and Mrs. A. M. Jongeneel, Santa Cruz, Calif. Oriented towards a view

Left. Bolton White, Architect. Residence for Mr. and Mrs. Frank A. Brown, Lafayette, Calif. Indoor-outdoor relationships are emphasized

in which is attained an altogether remarkable degree of open planning and a recognition of particularly local possibilities and needs. Nor have these precepts been forgotten; they have developed along with the development of new materials and products, so that today's houses are the direct inheritors of those whose "freshness" and "openness" and "simplicity" were a source of delight to the writer of an article on California homes in an early issue of the RECORD. New ideas in house design have emanated from California for a long time. The "California

Left. Anshen and Allen, Architects. Residence for Mr. and Mrs. Willard M. Mills, Danville, Calif. Porch roof controls heat and sun

Below right. Roger Lee, Architect. Residence for Mr. and Mrs. Roger Lee, Berkeley, Calif. See Building Types Study, pp. 116–118

Roger Sturtevant Photos

Charles F. Stauffacher, Jr. Remodelled residence for Charles F. Stauffacher, Jr., . . San Francisco, Calif. A 50-year-old building converted to office-residence

Roger Sturtevant Photos

Francis J. McCarthy, Architect. Residence for C. A. Bowman, San Rafael, Calif. Sloping site governs planning. Sunken fireplace dominates living room

Ernest Born, Architect. Residence for I. J. Quillen, Palo Alto, Calif. Lot contours and view dictated design. Interesting example of clerestory lighting

Esther Born Photo

Jack Hillmer and Warren Callister. Residence for Mr. Haines Hall, Marin County, Calif. The creation of a like environment both within and without was successfully achieved in the design of this house

Moulin Studios Photo

bungalow" swept the country but its more refreshing prototype had been accepted in California years before. The present rash of "California ranch houses" derives from the restudy of the Spanish ranch house of the 18th century. It will be interesting to see what influence today's ideas of domestic design will have in the next 15 or 20 years on the national concept of a house.

The dramatic topography of the Bay Area, the mild climate, and the long dry season have also been important factors in the region's residential design, and account to a degree for the openness of plan, the fenestration, the relation of structure to site, and the integration of indoor and outdoor areas. Another factor that must not be overlooked is the redwood tree, from which has come a material as much in use today as 50 years ago. Readers of the RECORD have, through the years, had the opportunity of watching in the pages of the RECORD the development of Bay Area domestic architecture. They have also had a preview of some of the houses included in the exhibition. Complete presentations of two of these houses — Joseph Esherick's Holt residence and Roger Lee's own house — will be found on pages of this issue. In the months to come the RECORD will present fully other houses from the exhibition.

Frank Robert. Residence for Mr. and Mrs. L. L. Richard, Three Rivers, Calif. Located on a high hill 40 feet above a mountain river, natural contours were used for terraces and outdoor living spaces

Dick Challacombe Photos

Fred Langhorst, Architect. Residence for Mr. and Mrs. Gaston J. Ley, Lafayette, Calif. Glass areas open to magnificent view

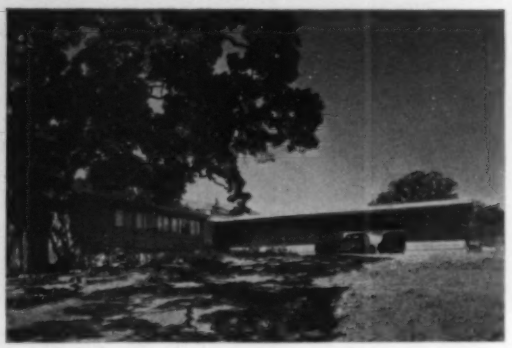
Henry Hill. Residence for Mr. and Mrs. Henry Hill, Carmel-by-the-Sea, Calif. Weekend house achieves openness in small space

Roger Sturtevant Photos

Worley K. Wong, Architect, and John C. Campbell. Residence for J. C. Campbell, Sausalito, Calif. Function dictates form

Clark and Beuttler, Architects. Beach house for Mr. and Mrs. Martin, Aptos, Calif. Oriented toward the ocean, this home has rooms opening to main patio

Roger Sturtevant Photo



John Ekin Dinwiddie, Architect. Residence for Mr. and Mrs. Lindsay Spight, Orinda, Calif. Designed for privacy, weather comfort and outdoor living

Pirkle Jones Photo

Victor King Thompson. Residence for Dr. Mary G. Hamilton, Saratoga, Calif. Heavy masonry masses stabilize fixed glass and asbestos cement panels

Moulin Studios Photo

Gardner Dailey, Architect. Residence for Mr. and Mrs. L. E. David, Ross, Calif. Planned to fit site contours and stress indoor-outdoor relationships

Roger Sturtevant Photo

Joseph Esherick, Architect. Residence for Mr. and Mrs. Harry Holt, Stockton, Calif. See Building Types Study, pp. 92–97 for further discussion of this house

Maynard L. Parker Photos

THE SOVIET ARCHITECTURE PURGE

*By Peter Blake**

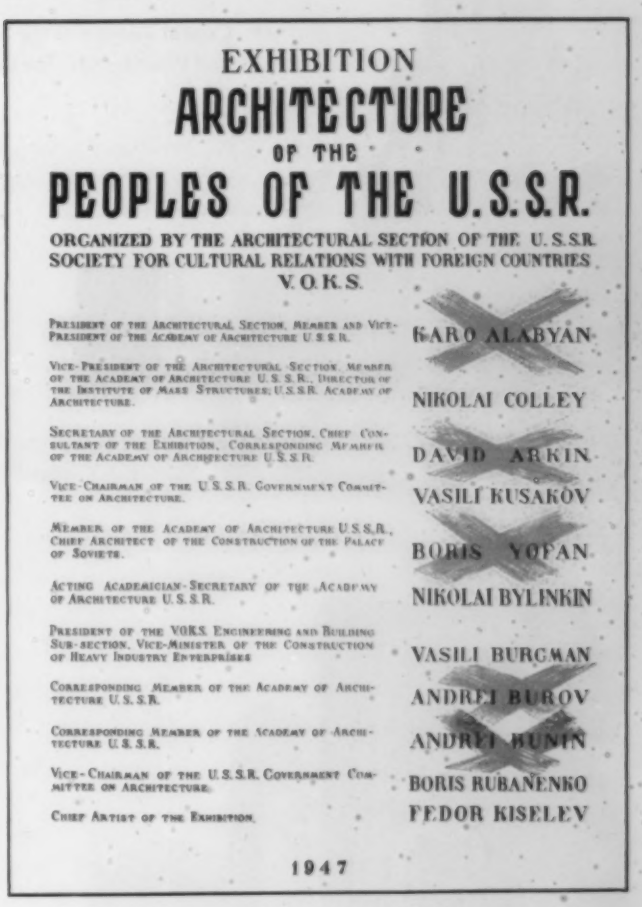
For the past year the Soviet Government has been carrying out a drastic purge of the USSR Academy of Architecture because of the allegedly "pro-Western, pro-American and general cosmopolitan outlook of its leading members." The purge was initiated on September 25th, 1948, in a *Pravda* article innocently entitled "Pending Questions of Soviet Architecture." Stripped of several thousand words of doubletalk, the article put an end to modern architecture in the Soviet Union, banishing once and for all the "pessimistic formalism" of the West, and ushering in the "optimistic socialist realism" of a new "Soviet Victory Style." Among the well-known architects who — to use the *Pravda* euphemism — are now "pending," there are such men as Karo Alabyan, D. E. Arkin, Boris Yofan, and others of their calibre.

To understand this purge in architecture it is necessary to go back to the year 1931 when the competition for the new Soviet Palace was won by an "Italian Renaissance" monument — over the entries of Le Corbusier and others. Its reactionary eclecticism has had a profound influence upon Soviet work from that time until, roughly, the Nazi invasion.

Many Russian architects who showed the highest promise during the late Twenties were ordered by the Central Committee of the Party to turn to the classical orders, and the safe formulae tested in the "bourgeois" West. Topping their marble wedding cakes with gigantic talismans of Josef Stalin ("our wise leader and teacher, the greatest scholar of our epoch"), Soviet architects felt reasonably sure that they were taking all necessary precautions against the GPU. They had failed to realize, however, how terrified police states are of the freedom of thought of their own intellectuals. Party lines had to be modified and reversed, and artists had to be made to eat their own words and to recant their "sins" to prove their complete subservience.

At the end of the war, then, the Soviet regime switched once more and started along the road toward what the architect Loukomski has dubbed the "Soviet Victory Style." Its appeal is three-fold: Neo-classicism, regionalism (preferably Byzantine), and "Socialist Realism" (which, in plain language, means more 50-foot Stalins on the roof). But the most important aspect of this new style is its rejection of everything Western and its espousal of everything Eastern. Yalta's palaces, in other words, rather than those of Florence.

This kind of switch was not as easy to make as it may appear. Let us examine the case of architect V. Shkvarikov, who visited Switzerland in the Spring of 1948 only to report (Moscow *New Times*, Aug. 4th, 1948) on the "amazingly poor taste and architecturally low calibre" of Swiss construction work. He had a special jibe for Le Corbusier's *Clarté* apartments in Geneva: "Against the background of the picturesque Swiss landscape the building looked like an absurd, alien growth . . . nothing in common with the people . . . doomed to wither away." If Shkvarikov was trying to make sure that he would not be suspected of capitalist infection, he failed miserably. Barely two months after his return from the picturesque Swiss landscape, *Pravda* sailed into poor Shkvarikov's book on city planning: "This 'work'


EXHIBITION
ARCHITECTURE
OF THE
PEOPLES OF THE U.S.S.R.
ORGANIZED BY THE ARCHITECTURAL SECTION OF THE U.S.S.R. SOCIETY FOR CULTURAL RELATIONS WITH FOREIGN COUNTRIES V.O.K.S.

President of the Architectural Section, Member and Vice-President of the Academy of Architecture U.S.S.R. — KARO ALABYAN

Vice-President of the Architectural Section, Member of the Academy of Architecture U.S.S.R., Director of the Institute of Mass Structures, U.S.S.R. Academy of Architecture. — NIKOLAI COLLEY

Secretary of the Architectural Section, Chief Consultant of the Exhibition, Corresponding Member of the Academy of Architecture U.S.S.R. — DAVID ARKIN

Vice-Chairman of the U.S.S.R. Government Committee on Architecture. — VASILI KUSAKOV

Member of the Academy of Architecture U.S.S.R., Chief Architect of the Construction of the Palace of Soviets. — BORIS YOFAN

Acting Academician-Secretary of the Academy of Architecture U.S.S.R. — NIKOLAI BYLINKIN

President of the VOKS Engineering and Building Sub-section, Vice-Minister of the Construction of Heavy Industry Enterprises — VASILI BURGMAN

Corresponding Member of the Academy of Architecture U.S.S.R. — ANDREI BUROV

Corresponding Member of the Academy of Architecture U.S.S.R. — ANDREI BUNIN

Vice-Chairman of the U.S.S.R. Government Committee on Architecture. — BORIS RUBANENKO

Chief Artist of the Exhibition. — FEDOR KISELEV

1947

Soviet propaganda exhibit was circulated among Western architectural groups in 1947. Its organizers, listed above, included prominent architects now in official disgrace (names crossed)

* Member of the recently formed "Americans for Intellectual Freedom."

The Palace of Soviets. Architects B. Yofan, V. Gelfreich and V. Shchuko won 1931 competition. Birth of "Socialist Realism"

Central Theatre of the Soviet Army. Architects K. Alabyan and V. Simbirtsev. The Red Star shaped plan was approved

Foreground: "Socialist Realism." Background: Agricultural Mechanization Building by architect Andreyev. Foreground has won out

Architects' Club in Moscow. Architect A. Burov interprets architectural Party Line

does not reveal either the nature, or the principles, or the vast achievements of Soviet architecture which are the expression of Stalinist care for humanity . . . it does not disclose the degeneration of bourgeois architectural science . . . faulty ideological positions . . . slavish prostration . . . antiscientific . . . ideological poverty . . . ," the *Pravda* review sputters on through several hundred increasingly incoherent and venomous words written by none other than Shkvarikov's "traveling companion" to Switzerland, the architect A. V. Vlassov.

The tirade against Shkvarikov was no exception. The architects Tsires and Gabrichevski are also "pending." *Pravda* accused them of "lack of political consciousness . . . bourgeois objectivity and formalism . . . faulty anti-Marxist ideas." The school of Zholtovski is said to have "assisted the growth of formalistic tendencies, the development of an ideology repugnant to us . . . fostered the perverted training of future architects . . ." The architect Polyakov built "a series of . . . frightful projects . . . of bad artistic taste . . ." Brod and Khrakov's work "reminds one of a soulless barracks." Velikanov's projects "are akin to that which the Soviet people long ago christened 'box style'," —and so forth.†

Next, we have the architect A. K. Burov, a brilliant former editor of Soviet magazines on modern architecture, and a man renowned for his excellent work on prefabrication. He had innocently written that the Soviet "perception of architecture is overburdened with historical sediments . . . In America, new ideas in architecture, freed from nihilism . . . and working through industry, began to germinate new organic architectural forms, a simple, clear language . . ." To architect Burov *Pravda* said that his "clear expression of the anti-popular ideology of neo-constructivism is an example of the slavish deference to the decadent art of architecture in America, a slander on Soviet art and on our building industry!" A little farther on the editors of *Pravda* get caught up in their own nonsense: "It is to be regretted," they regret, "that the Union of Architects . . . is not fond of creative discussion and criticism." No one seems to know what is meant by "creative" or by "criticism." Karo Alabyan, for example, as President of the Union in 1946, tried to be creative and mildly critical when he said: "So far we have no systematized work on the theory of architecture. . . . This has a

† *I wish to express my appreciation to the New York office of TASS, the official Soviet News Agency, which provided me with the copy of Pravda which contained the statements quoted above. P. B.*

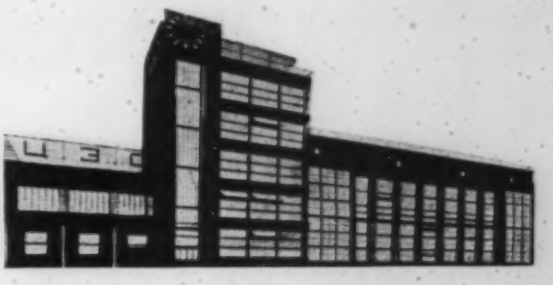
negative effect on our architectural-constructive practice." On March 21st, 1949, this started to have "a negative effect" on Alabyan! On that day he and five colleagues were told that they had "hampered the development of true Soviet architectural science by having continued to grovel before the bourgeois models . . . of the U. S. . ." Among this particular group of "pending" architects was D. E. Arkin who had only a year earlier indignantly told the editors of the *Architectural Review* that "architecture in the USSR, socialist in content, is developing in national forms . . . free from the corrupting influence of the capitalist market . . ." How Stalinist does an architect have to be in the USSR, one wonders, to please Josef Stalin? The answer is, perhaps, not too hard to find. The Soviet regime has long ago liquidated all those who objected to it on questions of principle. The two dozen-odd architects who have been under continuous and merciless attack since September, 1948 ** are probably denounced as the "Titos" of architecture — men with whom there is no basic quarrel of principle, but only a quarrel of loyalties. Their crime is to have looked to the West for inspiration, rather than to the walls of the Kremlin. They forgot that in the USSR there are not only travel restrictions upon men, but also upon men's thoughts.

However vague some Western architects may be on the facts of this situation, the editors of *Pravda* are admirably candid. Of modern Western architecture they say: "It has arrived at a hopeless impasse of formalistic perversions and box-like, soulless building, behind which hide complete poverty of spirit and nihilism. . . . This architecture has clearly degenerated into the fashion of serving only the perverted, diseased tastes of bankers and coupon clippers." And lest the architects of the USSR harbor any doubts, the editors of *Pravda* unmistakably hold out their mailed fist: "We must . . . frankly disclose," they warn, "serious perversions in the theory and practice of architecture, *resolutely and swiftly root them out*, and confidently advance our Soviet architecture *on the road appointed by the Party and the Government!*"

** Among them are: K. S. Alabyan, D. E. Arkin, D. A. Aronovitch, Z. Brod, A. Bunin, A. K. Burov, A. Gabrichevski, S. A. Kaufman, B. Y. Khiger, A. Khrakov, M. Polyakov, V. Shkvarikov, U. Sherdayev, A. Tsires, M. Varshch, A. Velikanov, B. Yofan, Z. Zakharov, and Zlobin.

To students of the purge trials, this is familiar prosecutor's talk. Not so familiar is the fact that it has also become an accepted form of Soviet art criticism. At the All-Union conference of Dramatists, in November, 1946, Soviet artists were told by propagandist Constantin Simonov: "Too often have we failed to realize that we have fought, are fighting, and will continue to fight; and that our art is no museum of historical arms, but an *arsenal intended for war!*"

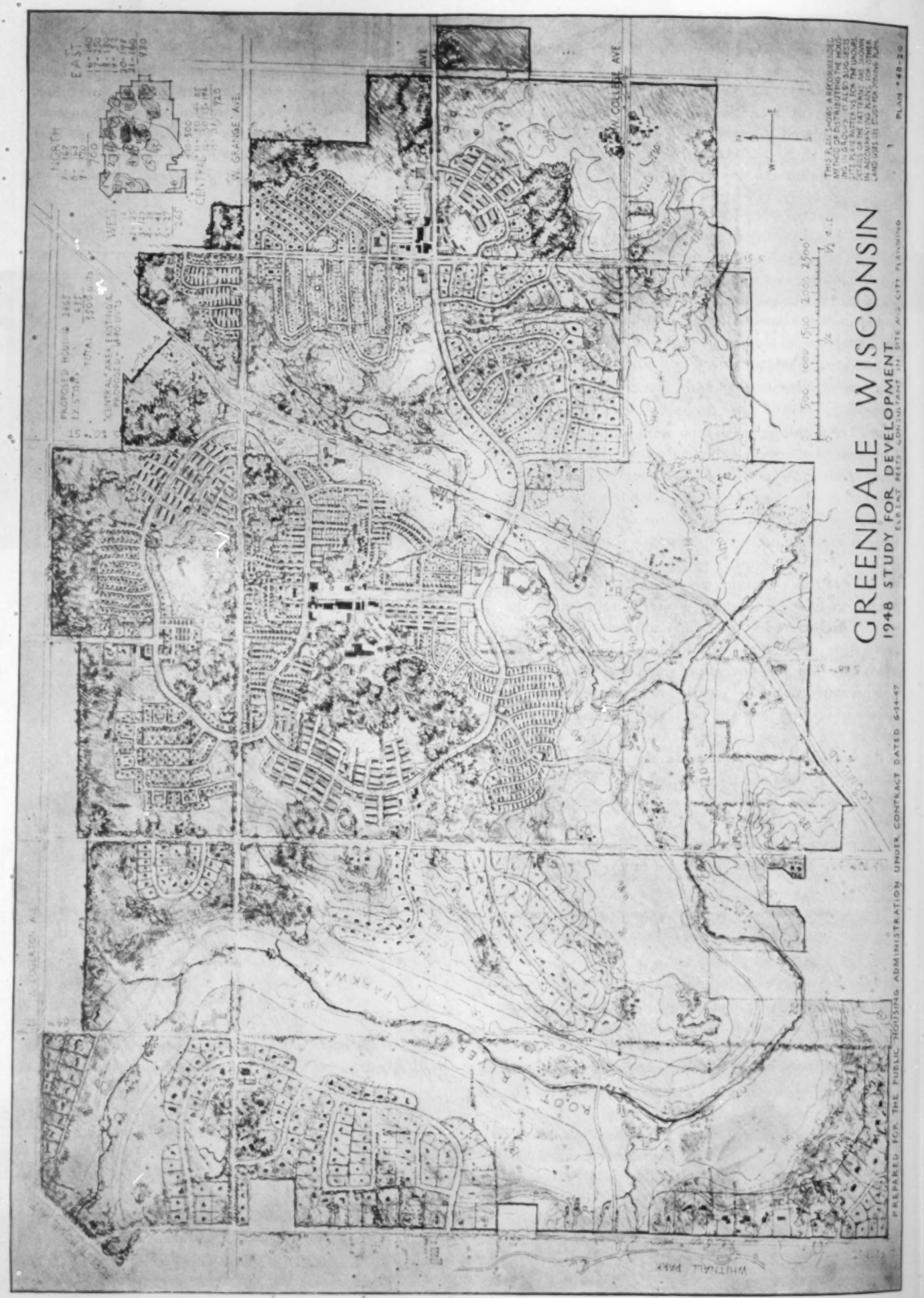
Barvikha Sanatorium. Architect B. Yofan. Relapse into "poverty of spirit and nihilism"



Design for Power Station at Kiev. Architect Burov is accused of "slavish deference to . . . decadent . . . architecture" in U. S.

Design for apartments. Architect Alabyan "hampered development of Soviet architecture . . . groveled before U. S. models"

Pravda, whose editors abhor modern architecture, is printed in this "perverted, and souless barracks—of bad artistic taste"


GREENDALE WISCONSIN
1948 STUDY FOR DEVELOPMENT
PREPARED FOR THE PUBLIC HOUSING ADMINISTRATION UNDER CONTRACT DATED 6-14-47
PLAN #48-20
N. GRANGE AVE.
N. COLLEGE AVE.
WHITNALL PARK

THE OCCASION

The occasion for the group of planning studies shown on these pages was this: the Public Housing Administration contemplated the disposition of the three greenbelt towns—Greenbelt, Greenhills and Greendale—under restrictions assuring in each case a development reasonably in accord with the original plans and objectives. PHA asked its consultant on planning matters at Greendale to prepare for that property a plan study that would exhibit its development possibilities and show a scheme of land use, dwelling types and densities that might serve as the background for a negotiated disposition agreement. Mr. Peets was authorized, also, to recommend a general system of main thoroughfares and to suggest patterns of detailed subdivision and site planning. The plans he prepared have helped to stimulate public and private efforts that now give promise of a large private housing development at Greendale.

THE GENERAL PLAN

The general plan, covering about five square miles, shows existing village roads, on half-mile squares, and a diagonal state highway. The present town, about 600 units—designed 1936–37 by a staff headed by Jacob Crane, Elbert Peets, Harry Bentley, and Walter G. Thomas—is at the center of the property, clustered around the civic and shopping group at the junction of straight Broad Street and curved Northway. Upper Northway (completing the irregular oval) and the curved street west of the "old town," are proposed. Many of the patches of proposed housing can be identified as the areas shown at larger scale on the pages that follow. Exhibiting clearly a strong differentiation of circulation routes and residential streets, the plan is probably unique in its union of a simple basic structure with emphatic modulation and great variety in its component parts.

STUDIES IN PLANNING TEXTURE

for housing in a greenbelt town

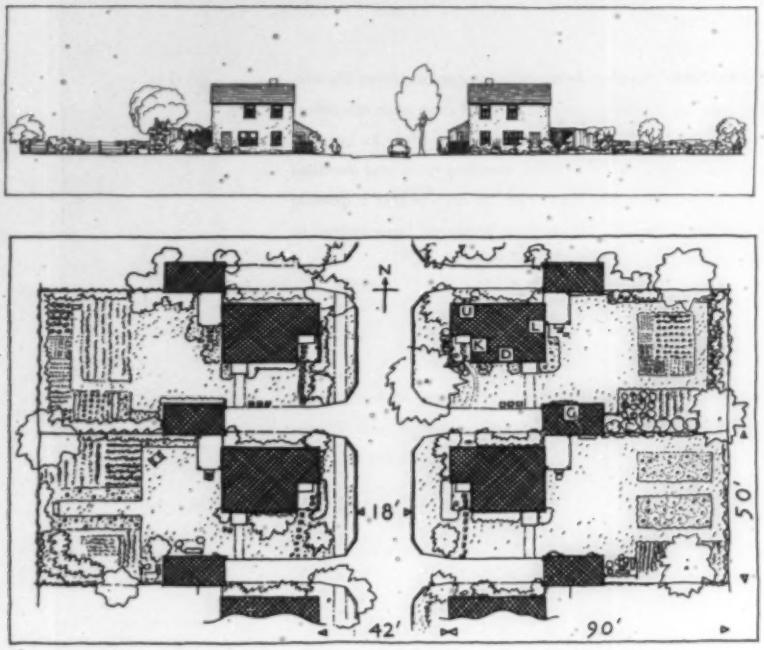
By Elbert Peets

BY TEXTURE I mean here a residential planning scheme — the relation of house to lot, of lot to street and of street to city plan. There are many such schemes; in this country the commonest is our familiar grid of streets lined with curbs, street trees, sidewalks and lawns; the houses are usually "singles," each with a drive to a garage in the rear yard.

For several decades this American Street, as it might be called, has been under critical attack. Strictly, it is not a *residential* street but an all-purpose street that happens to be used for housing. It carries much casual traffic and the city's growth may make it a crowded thoroughfare. This possibility, or the tradition of it, explains the excessive width of right of way and building setbacks. The costly frontage development tends to make the lots narrow and deep; they are therefore unfavorable to sensible house planning and ill adapted to use as outdoor living space. Views from the front windows are dominated by cars, moving or standing, yet the house is not conveniently related to the automobile. The family car usually travels an excessive distance on the lot; visitors come and go across a public sidewalk.

Perhaps the first alternative solution to present itself — other than the millionaire suburb — was the English garden city. Within a few years, planners were talking about superblocks; using this parti, Clarence Stein and Henry Wright designed a Town for the Motor Age. With half an eye on Radburn, the greenbelt towns were built, and many private developments. A vista toward more likable planning textures began to open up.

In the same period, however, another planning movement was under way — a gathering indignation against exploiters who chopped up farms into 30-ft. lots improved only with corner stakes and cinder sidewalks. To cure this disease, civic leaders drafted subdivision codes and zoning laws, and they kept up their demands for wider streets, larger lots, more complete improvements. These measures quite successfully keep out the predacious subdividers — but unfortunately they also keep out everything except the American Street. Are



1

Typical Greendale house

In the present Greendale village about half the families live in single houses, most of them arranged as shown in this schematic plan. The cul-de-sac runs north and south, the houses facing south, parallel to the street. A car, entering the side court, stops within easy reach of the kitchen and living room doors. The garage helps to enclose the neighbor's porch and protects it from north winds. (This is rental housing.) Thus placed, the garages create a semi-enclosed lawn at the house. The lot is small but efficient; there is space for vegetable gardening. The narrow street makes utility connections very short. Negative factors: children play in street; sidewalk (not in original scheme) too narrow; no place for Sunday promenade through street; few people see the pretty gardens

new suburbs charming with Radburn's courts and inner parks, or with Greenbelt's shady superblocks? No. The only apparent change since the 1920's is that the houses are smaller and the streets are wider.

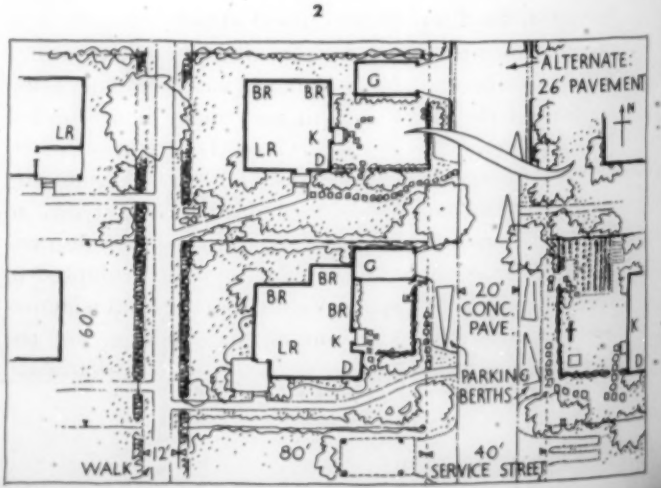
City engineers and zoning officials are the most conservative group known to anthropology. Still, a few cities have amended their ordinances to give large developments some degree of release from the codes. These breaches in the zoning wall, it must be noted, are not so much due to the new site planning as to the federally financed housing projects and the big apartment developments. But they are a welcome beginning; one purpose of these Greendale studies is to present some of the planning techniques that should be made permissible under special zoning paragraphs — or, better still, should be recognized in the general provisions of subdivision codes, zoning ordinances and master plans.

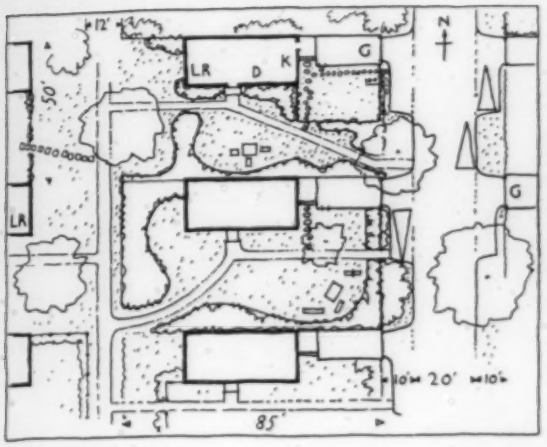
The Greendale plans, only part of which are reproduced here, used three scales — 20, 100 and 400 feet to the inch. A first study, on a 400 scale topographic map, laid down the main circulation lines. The housing areas, also, were outlined and assigned tentative densities. Next, the 20 scale schematic studies were worked out, without reference to any particular site. These schemes, sometimes in combination, were then applied to appropriate building areas in plans drawn over 2-ft. interval topo sheets at 100 scale. Reduced to 400 scale, these area plans were traced to make the tentative general plan here reproduced.

The program of the studies, in addition to the basic purpose of reconciling a large development, consisting predominantly of mass housing, with the social-esthetic standards of the greenbelt towns, included two practical objectives: first, to spend as little as possible on streets and utilities; and, second, to hold down the municipal operating costs, a high tax rate being the town's great competitive handicap. The raw land cost was not high enough to be a determining element in fixing densities. Total occupancy was set at about 3500 families, the estimated limit of the market; this figure represents a gross density of about one family per acre. A development plan based on acre and half-acre lots was rejected because it would destroy the regional recreative and esthetic value of the land — in an urban region the greenbelt is a factor of regional texture, not of town planning — and because the site and municipal costs would be more than most of the customers could afford.

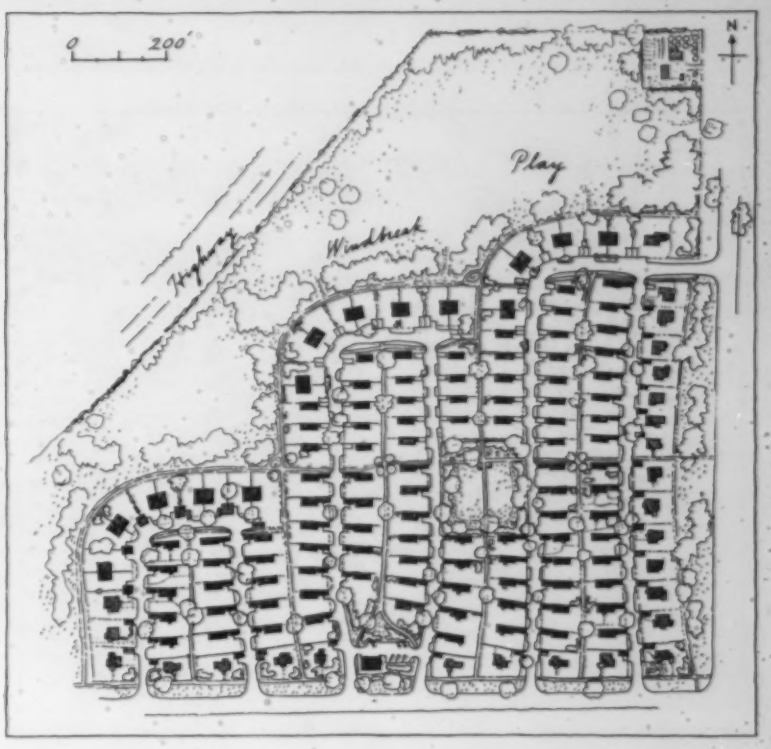
The general plan is therefore grounded on the principle that a low gross density justifies a relatively high average net density. There is, however, a wide variation of density among the different housing groups and there

2





4



5

Solar house, lot and street

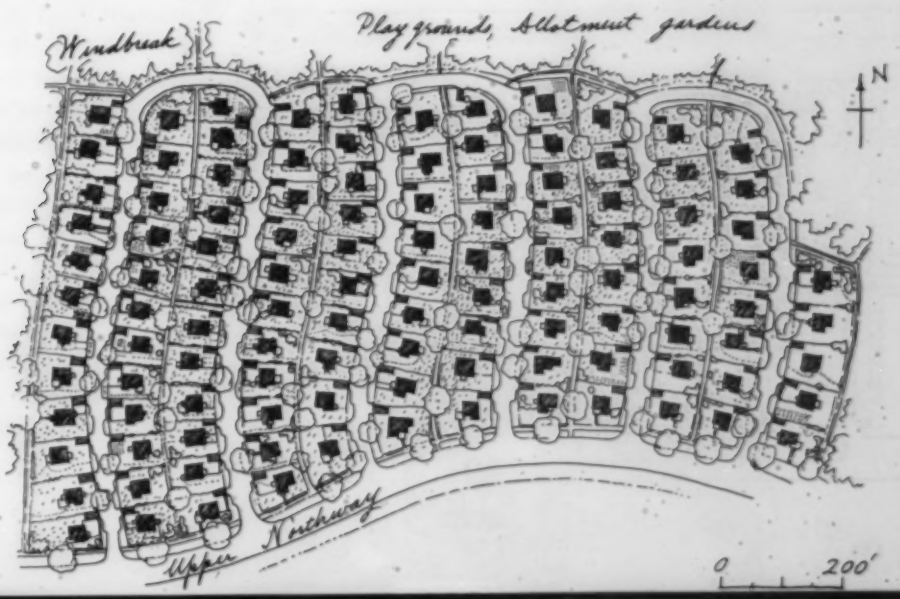
The word "solar" is used here in a meaning broader than its usual implication—in fact the center of interest is rather the lot than the house. And the lot is considered as one of a series of lots, so that the group of families may cooperatively enjoy in full the advantages of sunlight orientation. In these two-story houses all rooms but the bath have south windows—large or small, as the architect may desire them. But it is also part of the plan that in the north wall there are no windows—though there will be glass blocks and ventilators. This makes the yard usable right up to the neighbor's house and gives, with the help of tactful planting, unusual privacy to yard and house. (There is nothing less private than the back yards of ordinary two-story houses.) The front door could be at the north corner, but the south location gives a traffic-free living room and joins outdoors to indoors with dramatic effectiveness. . . . The kind of casual off-pavement parking shown here is the most economical and practical.

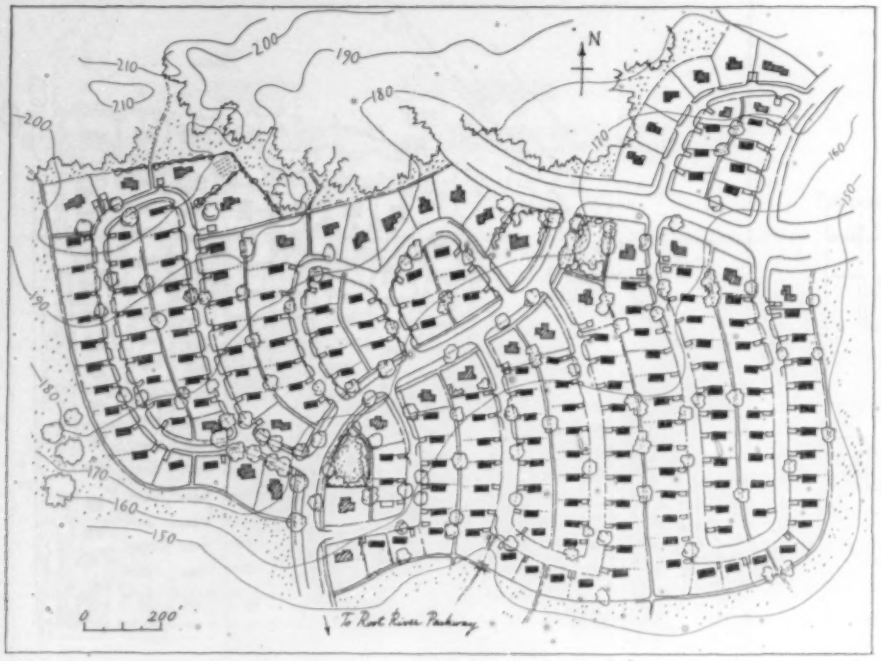
Solar houses work best, of course, on a south slope and where service drives can run approximately north and south. (It should be noted that the light effects in a north-south street are superior to those of an east-west street, in summer and winter.) The group in drawing 5 comprises 98 solar houses with a fringe of 26 one-story singles and 26 units in two-story twins. The fringe is both esthetic and practical in purpose: the one-story houses can protect themselves better against the traffic streets and the twins can take advantage of northerly views across the greenbelt, which would be wasted on the solar houses; they also make a pleasanter picture from the highway. . . . The net density, omitting traffic streets and greenbelt, is 6.7 families per acre. . . . Looped drives are preferred to dead-end streets. For one reason, they can be longer. The use of short culs-de-sac so increases the expenditure for collector streets as to make it a heavy construction and maintenance burden—and the increase in the number of collector streets tends to negate the safety and convenience that are the justification of the special residential street.

3

One story houses on 60- by 80-ft. lots

These plans show the elements of the center-walk scheme. Lots are relatively wide, side yards are emphasized, front door is convenient to both center walk and service street. The garage, at the northerly edge of lot, helps enclose a small but useful kitchen yard. Off-pavement parking berths are shown in various forms.

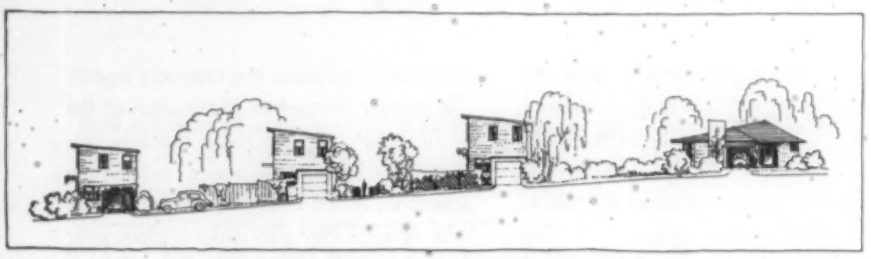




6

Solar houses on 60-ft. lots

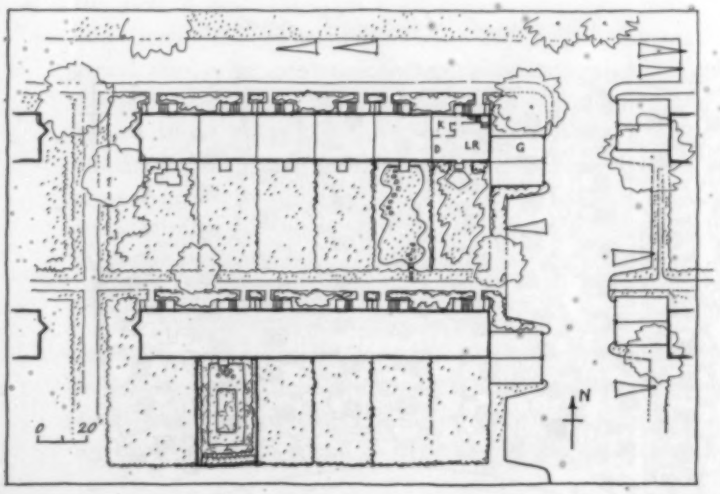
Plan 6 was studied over the topography of a fine section of Greendale, the "south hill." An earlier study was based on half-acre lots and custom built homes, but the strong south slope tempted the designer to try a solar house layout. . . . The hill commands a far view over a river valley. This plan, if adopted for building, needs careful checking on the ground to determine whether the open channels should not be straightened in order to preserve good views. Certainly some of the houses in the south fringe should be moved because they block vistas along the center walks. Tree planting should be done with the same point in mind. . . . The section brings out the importance, architecturally, of the high fence as a bond between house and its site



Row houses, common orientation

Drawing 7 is a variation of drawing 8; it is adaptable to sites permitting southern orientation of the garden front. A southerly slope is desirable because the lower end of the yards is the best line for the flow of surface water. The unit and yard scheme—a single door as service and social entrance, living room at "rear," all buildings facing same way—probably stems from Neubuhl, the famous housing group near Zurich. FHA has recommended it and a version won a New York state housing prize. About 22 ft. wide, it is a luxurious two-bedroom unit. This scheme is not used in the general plan; it could be substituted, in right locations, for solar houses or standard rows

7



is a considerable range of lot sizes within most of the groups. The very scenic west part of the village is expected to attract high income families. This area, like several other housing groups, is laid out with streets of conventional type.

The planning textures presented here as substitutes for conventional street and lot arrangements all propose a separation of the pedestrian and vehicular channels of movement, the vehicular channel being in most cases at the rear of the houses. That, of course, is the scheme of Radburn and many housing projects. The Greendale studies differ from Radburn in the use of looped service streets instead of culs-de-sac, in the franker recognition that visitors will approach the house from both front and rear, and in more detailed accommodations for owners' and visitors' cars.

The two channels — service street and center walk — will be described briefly; the plans and captions show some of the different forms they may take.

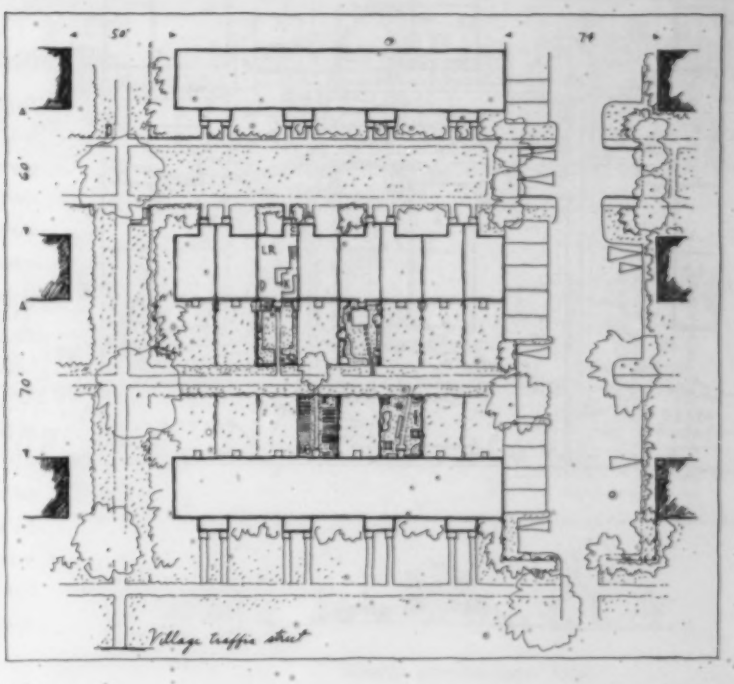
The service street is narrow — say a 40-ft. right of way — but is planted with trees and shrubs to relieve it from looking like an alley. The traffic pavement is 20 ft. wide, of good concrete for low maintenance. It has a V section, making its edges comfortable for walking, and because this section makes curbs unnecessary and permits the pavement to serve, often, in place of a storm sewer.

Site plan for row houses

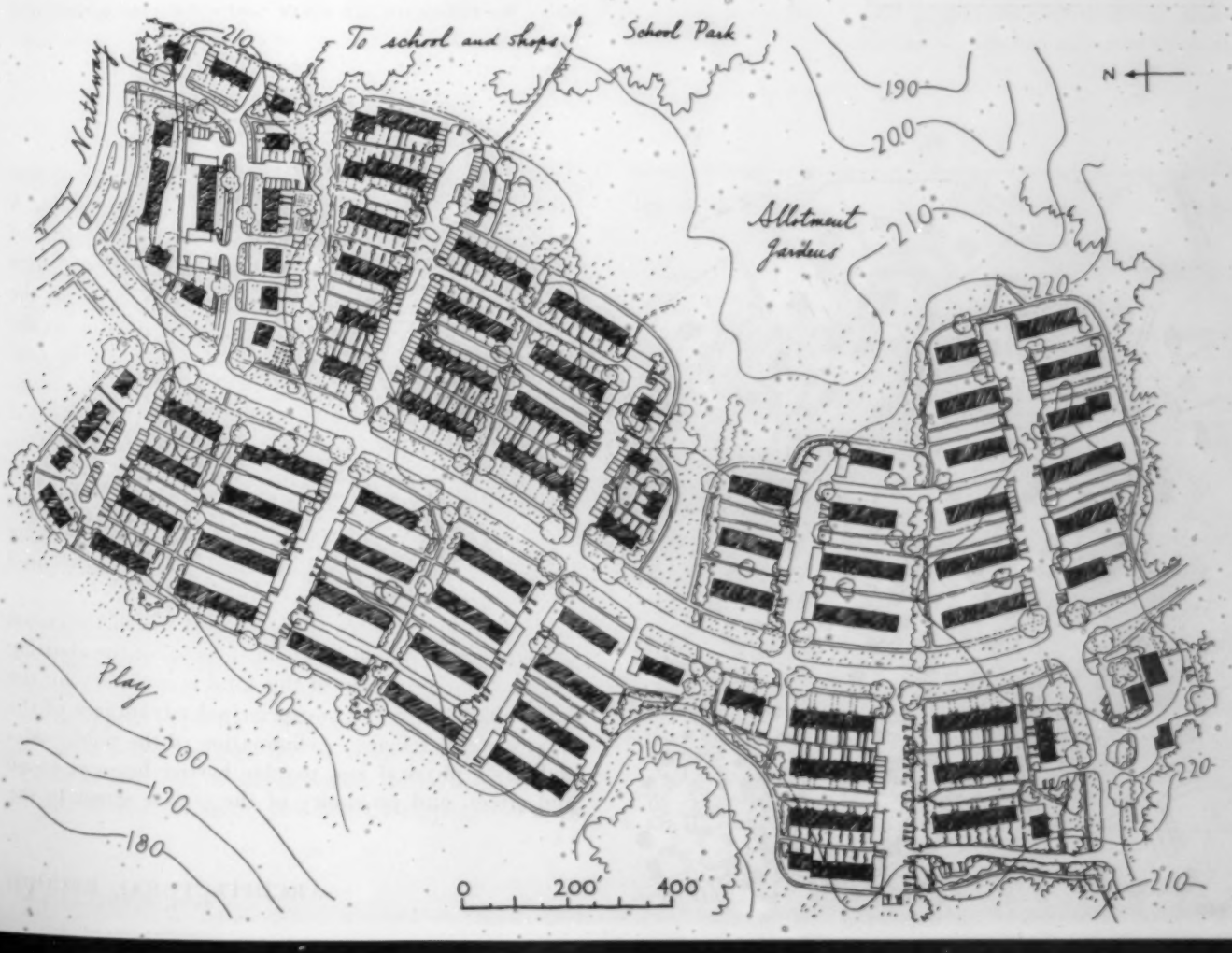
The row house, once common in the middle west, was made obsolete there by the balloon frame and street cars. The later demand for higher density was met by the "flat." Now, reintroduced by government projects, row houses are gaining acceptance. . . . The family car and the garbage-can are the twin dragons that must be overcome by the row house site planner. Shall the front area be desecrated by cars or shall the vehicles be at the back, the visitor finding the front door if he can, stumbling through the kitchen if he must? The currently smart solution is the dual purpose door (Neubuhl again?) the car being parked at the curb—which is virtually at the door—and the garbage-can being obscured by concrete. Thus it is at Fresh Meadows, Long Island, where the front area is a vast lawn. That's o. k. for N. Y. C., but citizens of U. S. proper yearn for yards. In USHA days the Technical Division favored "end space parking" to keep the car out of the domestic picture, front and rear; this is the solution on which studies 10 and 11 are based. They assume that the housing is for rent—or the houses, with yards, might be owned by individuals, the rest of the land being maintained by a group agency. The service lanes are normally connected to form loops; in a few cases short extensions are treated as culs-de-sac. The parking, in garages or parking bays, should be 100 per cent plus a few berths reserved for visitors and placed near the walks giving access to the front doors. The circulation system includes walks in the end spaces not used for parking; these walks give access to the village traffic street and to the greenbelt space.

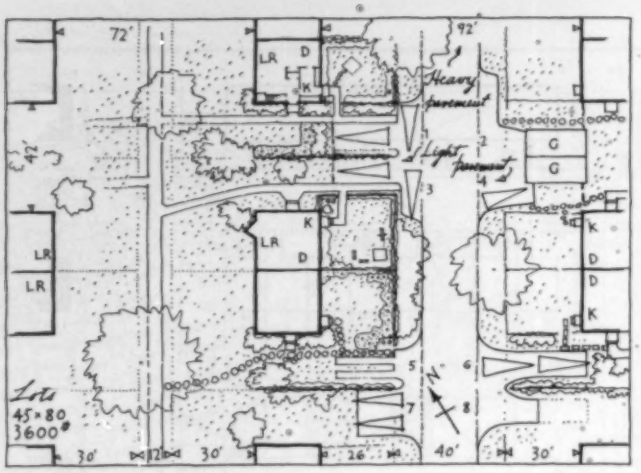
The project plan (9) contains 500 units having an average frontage of 20 ft. The net density is about 12.5. . . . The dog-leg street in the upper left corner was necessitated by the surface drainage situation.

8



9

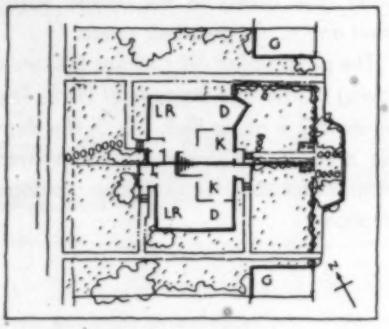




10

10–11 Twins—not necessarily identical

Except around Wilmington (Del.) and Chester, and in scattered mill towns, twin houses—officially known as semi-detached dwellings—do not seem to be established as a traditional dwelling type. During the "defense" period many thousand one-story twins were built; they saved plumbing materials and weren't as regimented as rows. A few commercial developments have used them, selling the units separately. It is a type that should be studied; besides saving a little construction cost and a little heat it reduces site costs and is very efficient in the use of lot space. In the accompanying plan each lot is one-twelfth of an acre, yet the spaces between the 24-ft. by 48-ft. buildings are 42, 72, and 92 ft. To avoid an excessively symmetrical look, twins should be designed to stand back to back rather than side by side. That favorite sadism of public housing, the common entrance walk, must, of course, be avoided. Inequality of orientation is inevitable, but by special features—such as the use of bay windows, the disadvantage of a northerly unit can be reduced. . . . An important item of construction design is suggested by the war-housing story of the man who called out "What time is it?"—and the neighbor's wife answered "Seven o'clock."



11

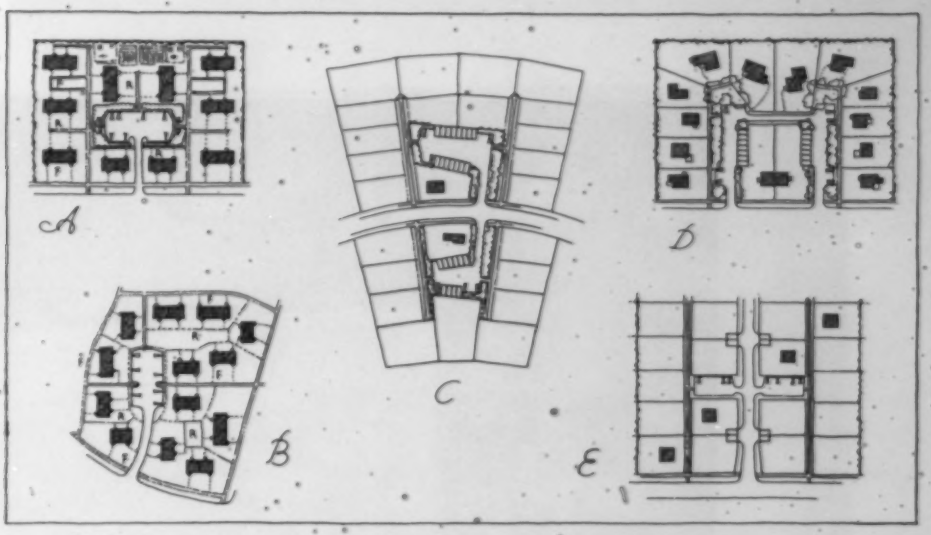
12 Twin site plan

In the patch of town plan (12) the looped service streets are bent zigzagwise by 10° angles at 300 ft. intervals, that being the standard spacing of sewer manholes. (The ground has a moderate uniform slope.) This method of breaking straight streets is considerably cheaper to build than if curves are used. The execution is also more exact—it is very difficult, these days, to get a walk built with really smooth long-radius curves—and reversed bends are more convincing than reversed curves. In "old Greendale" the culs-de-sac are mostly bent rather than curved, and they look very well

12

The functions of giving access to garages and of providing car parking are also performed effectively. A garage or covered carport can be built at the right of way line, requiring only a 10-ft. apron to connect with the pavement. Additional parking is provided in the lateral strip between pavement and lot line, or on the lot. Definitely, this lateral parking must not be continuous — it must be broken by patches of grass, shrubbery and trees. If the parking were made continuous it would be used by moving traffic and would ultimately require heavy pavement. Separated bays can be paved with a light material such as broken stone or gravel, with grass as a binder. The plan should permit car parking on one side of the concrete pavement at points not used for access to parking berths.

At each house there should be one berth for casual parking and it should be at the disposal of the abutting owner. Some provision of this kind is necessary for the full utilization of the two principal advantages of the service street scheme — elimination of the public sidewalk as a physical and psychic barrier between house and street, and proximity of the service street to the



13

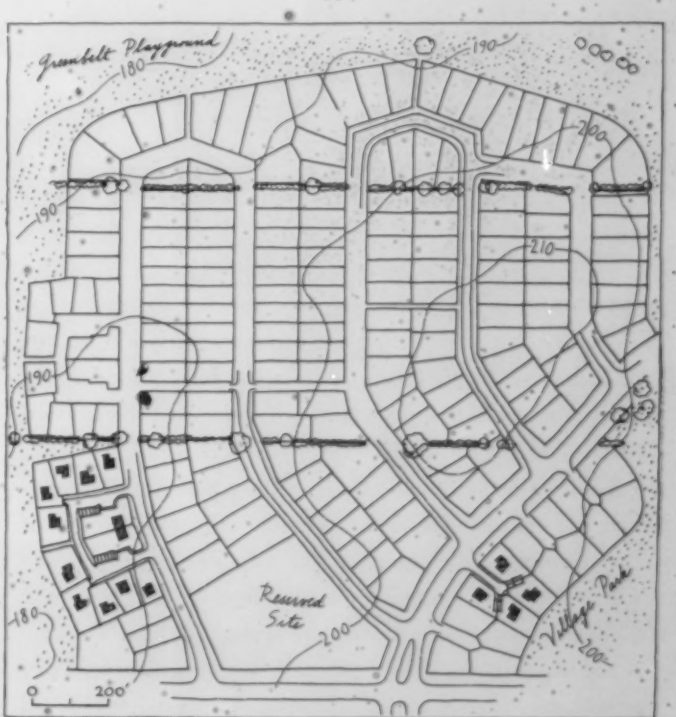
Park and walk in

A few planners and architects are asking if it is necessary to bring the car up to the house—why can't a single garage compound serve a dozen houses, each standing in its own garden, with a pleasant walk connecting it to the compound and the street? In the past, fuel delivery has been the obstacle; oil, gas and electricity now make the scheme technically feasible and the big garden apartment groups—FHA permits a 250-ft. walking distance—are preparing the way for its acceptance. As a crude parti, the idea was used in many war projects; sketch plans (A) and (B) are from Pensacola. Plan (C) is an early schematic study, not used, for the American Community Builders' development, Chicago. Study (D) is an effort to correct the vulnerable points of (C)—distance from car to house, fire protection, waste collection, access to lot for heavy repairs. Plan (E) is merely a double-frontage street, an idea all planners have played with. The park-and-walk scheme is the most plastic planning motif imaginable; it unquestionably has value in special situations such as shore lines, park boundaries, fine wooded areas, rough topo, and odd-shaped building sites. Any pattern that is not linear in character, however, will almost certainly increase utility costs; a pattern limited by the fire-fighting distance does not develop utility spurs of sufficient length to justify the cost of the collector street. As will be noted in the version of plan (D) used in drawing 14, residents of the group must turn an additional corner to get to their homes. Street corners symbolize wasted utility lines; the cheapest town to build and operate would be—diagrammatically speaking—one in which no resident turned more than one corner in going from his home to the shopping center

Mostly conventional lots

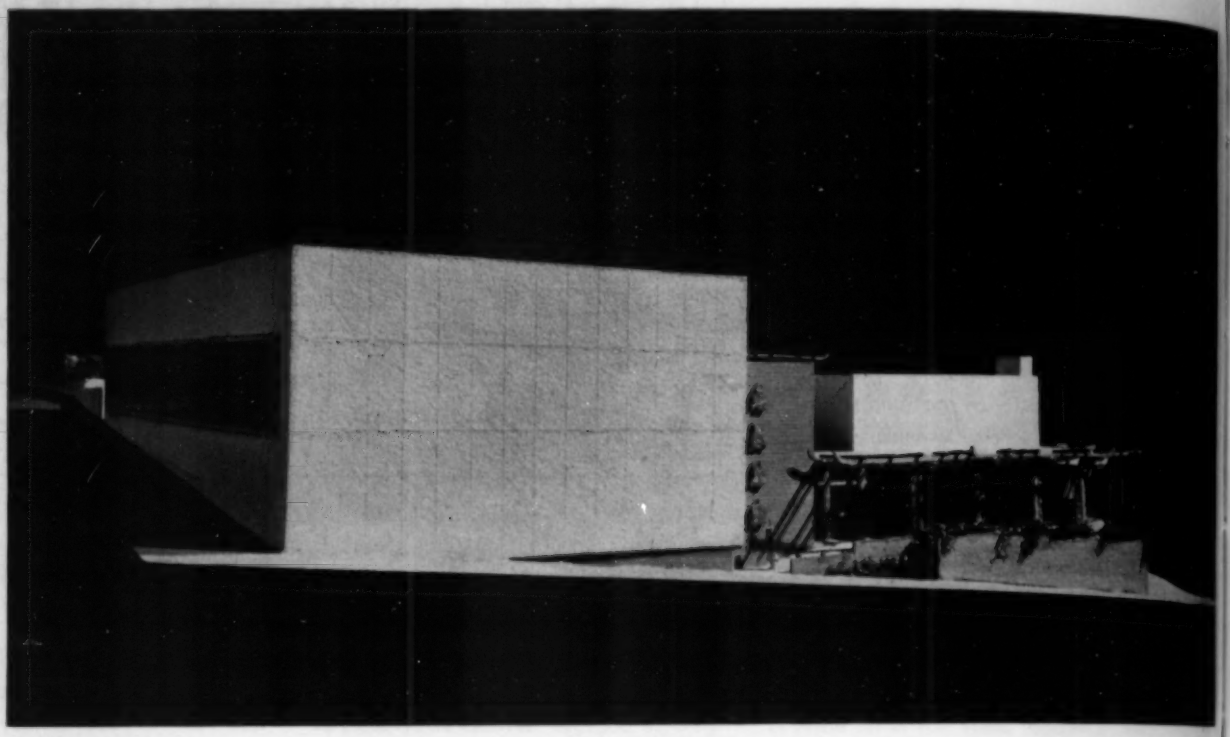
Plan 14 is a research study for the subdivision of areas at Greendale that may be laid out in substantially conventional streets and lots. Two old hedgerows traverse the site; street and lot lines have been adjusted to save them and to feature the large trees. The angular treatment of the loop-ends facilitates drainage and makes a definite point at which the street names change. All residential streets branch from a main village traffic street—to simplify finding addresses. The little court schemes are used to develop building sites not reached by normal lot depth

14



kitchen side of the house, where the family car's natural affinity lies.

Shifting now to the pedestrian channel, the center walk should be liberally designed; while it goes without saying that active adults and older children will use the service streets when their direction of travel makes it convenient, nevertheless the center walk is a necessary symbol of propriety and completeness in the organization of the home. From the walk, people will see the petunias in the garden and the pretty glass oddments in the living room windows. It will be an ideal place for the play of the young and gossip of the old; serving twice as many families as a conventional sidewalk, it should be a more effective instrument of sociability among neighbors. It must therefore be wide, say 6 ft. of concrete with a good grass strip at each side for snow plowing and clearance from shrubbery. Where it branches off from the sidewalk of the big traffic street will be a good place for a seat or two; at the farther end the walk ought to lead out to open recreation space. As far as possible, of course, walks through green areas should be used for access to schools, shopping and work.



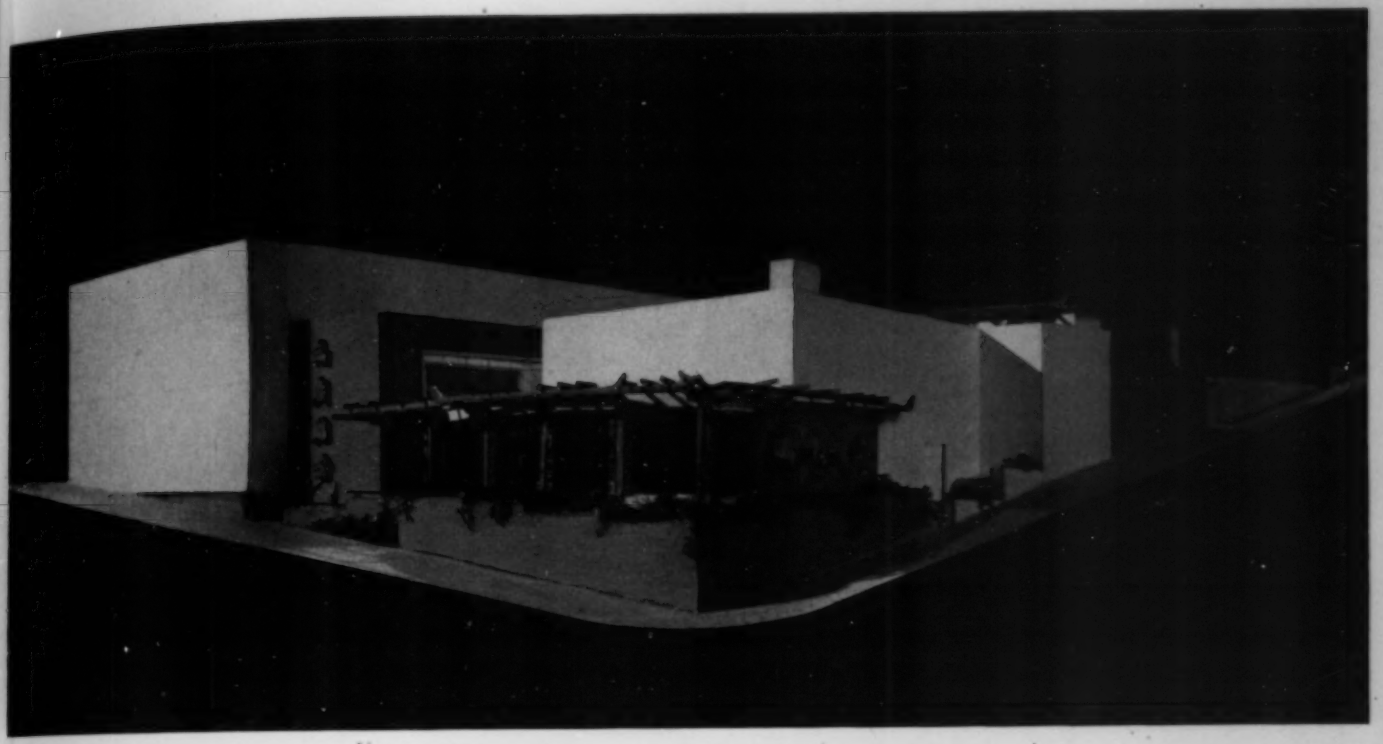
RECREATION CENTER FOR SAN FRANCISCO'S CHINESE POPULATION

William Gladstone Merchant, Architect

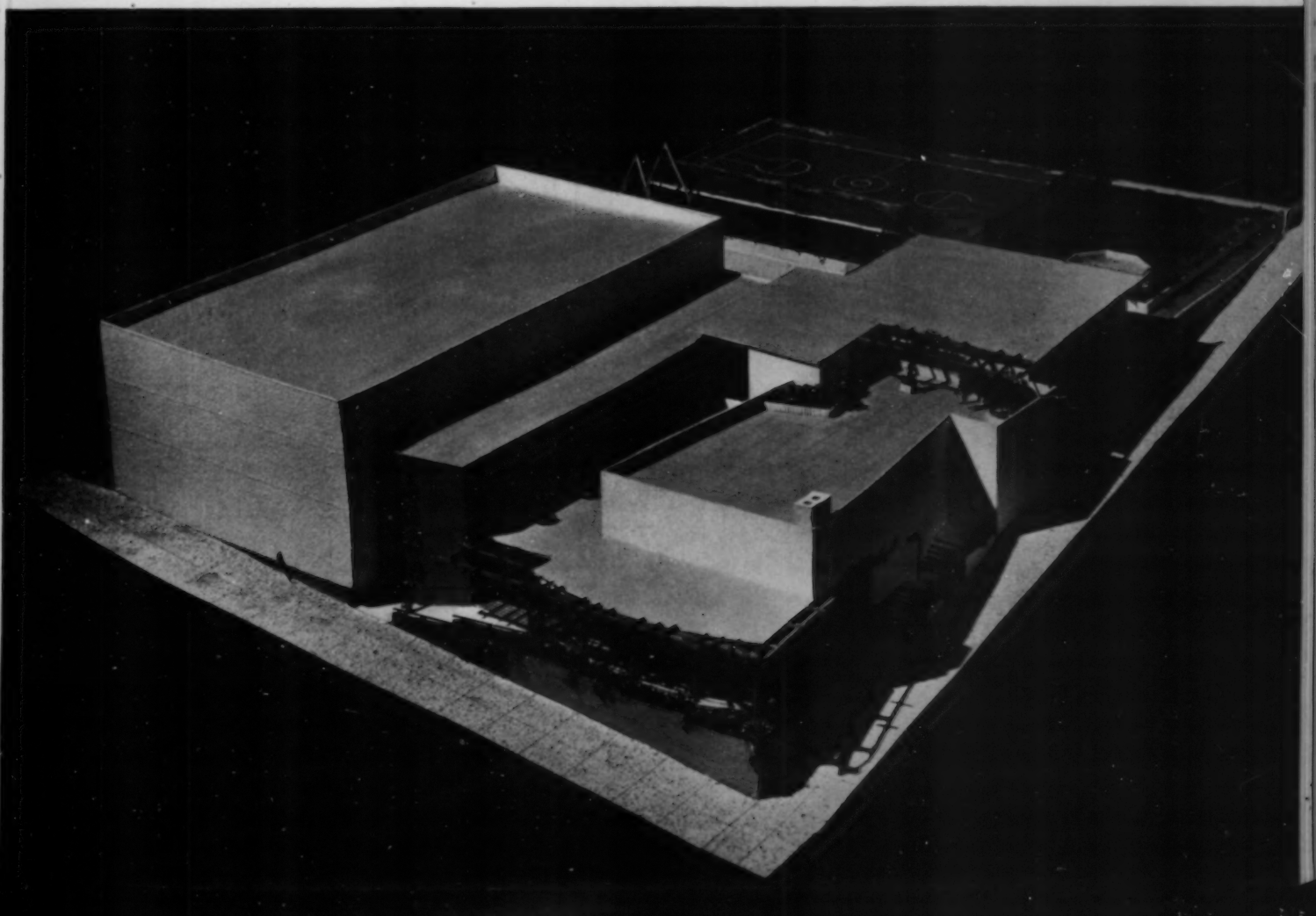
THE area in San Francisco for which this recreation center is planned has a Chinese population of approximately 16,000. It is extremely hilly and densely built; there are few play spaces except for the crowded sidewalks and the streets themselves.

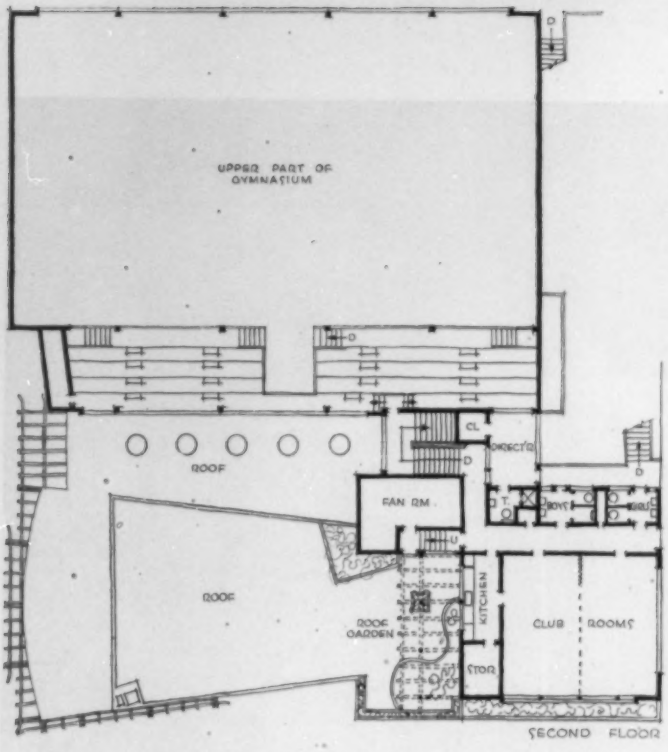
Under the guidance of Miss Josephine Randall, Superintendent of Recreation for the City and County of San Francisco, this project has advanced to the stage where construction is expected to begin in 1950. Nearly $300,000 has already been appropriated for it. The site is an abandoned school site, no longer suitable for a school, surrounded by high buildings, in a neighborhood where the tendency is to build ever higher, to increase the already heavy concentration of population.

The intention is to attain something of an Oriental appearance through the use of glazed brick, powder blue in color, of painted pergolas and of painted exterior and interior walls. But the center is not to be limited to Chinese usage; any citizen is to be entitled to its privileges. It will be open from early morning until 10 at night, under the supervision of two directors (one man, one woman). If all parts of the center are in full use by spectators as well as participants, 500 to 600 people — minors and adults — can be accommodated.

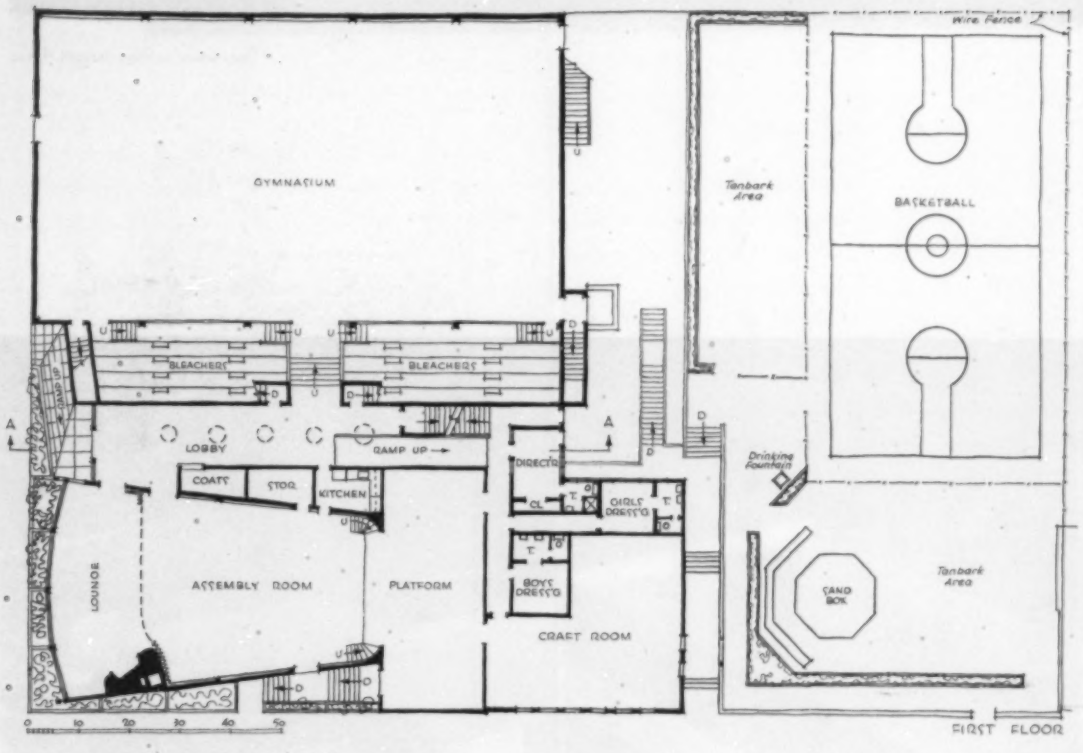


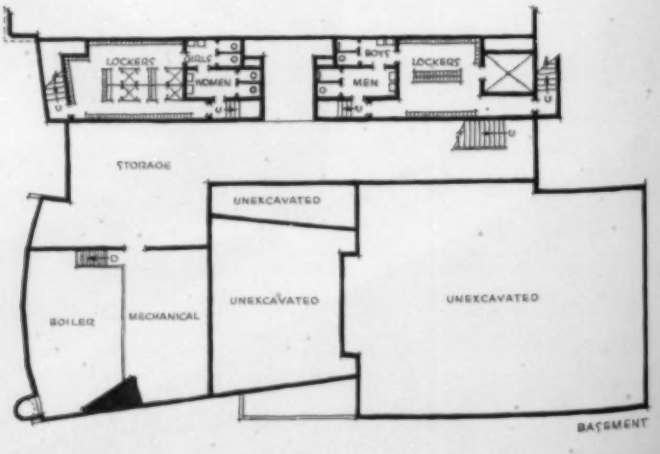
Dean Stone — Hugo Staccati Photos





The well-organized plan includes a gymnasium with permanent bleachers along one side and locker rooms beneath; assembly room with ample stage; craft room; and directors' office and boys' and girls' toilets located accessibly to outdoor as well as indoor facilities

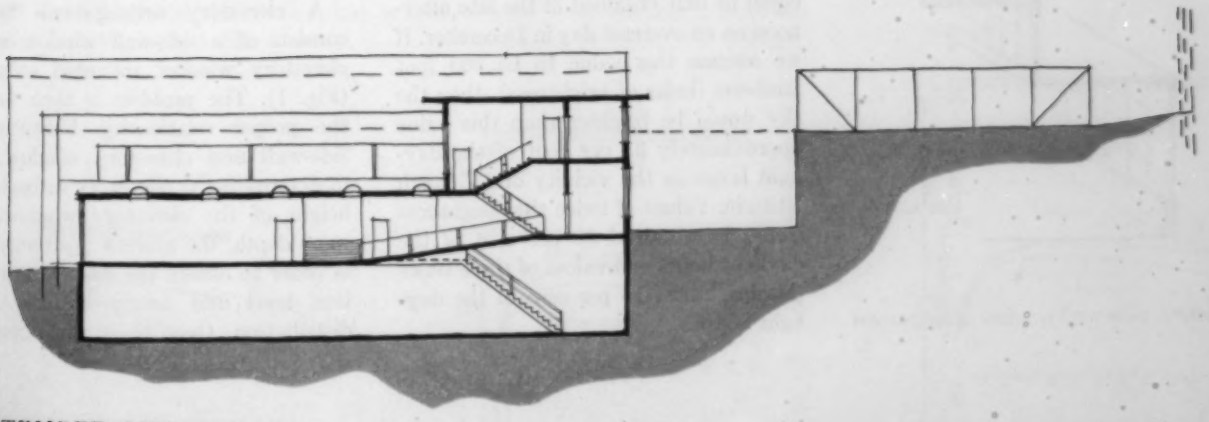




Photos by Dean Stone — Hugo Steccati

Model and section show adaptation of the building to its hilly site. Outdoor areas, at higher level, include two portions surfaced with tanbark so that the small children who use them will not suffer hard falls; outdoor game court is hard-surfaced.

Tanbark area has direct access to sidewalk so small children, and mothers pushing buggies, will not find entrance difficult. In future, court behind gymnasium is to be roofed where indicated by dotted line (section, below) to provide an exercise room.



DESIGNING FOR DAYLIGHT WITH CLERESTORY WINDOWS

The design principles for clerestory lighting described in this article illustrate how a rigid theoretical approach can be applied to yield simple and useful rules of thumb for daylighting designs; these rules are applicable to clerestory arrangements for all types of buildings

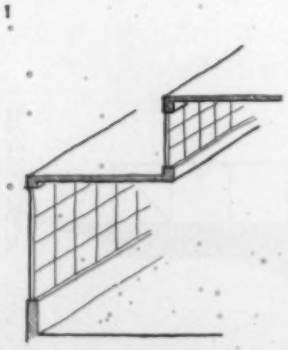
By Bernard F. Greene,

Lighting Consultant, New York

NATURAL lighting is an important part of the design of a building. For good lighting the type, area and dimensions of the window openings must be carefully planned to obtain adequate, well distributed illumination which is free from glare. To meet this challenge the science of daylighting is steadily being developed. Daylighting designs based on intuition and fancy are gradually being replaced by products of sound engineering methods.

Designing for daylight can be accomplished today by the same rules used in artificial lighting systems. However, because of the many more factors involved in daylighting design, it is important to follow a systematic approach in which each phase of the problem is considered separately. The purpose of this paper is to describe one such phase of daylighting — the clerestory window. Other problems such as sunlight control, window spacing, skylight and monitor design, etc., can be discussed separately.

The design of clerestory windows lends itself to engineering analysis; by the application of mathematical methods, clerestory window arrangements can be designed which are applicable to schools, offices, factories or homes.



Clerestory, side-wall window arrangement

Approach to Daylighting Design

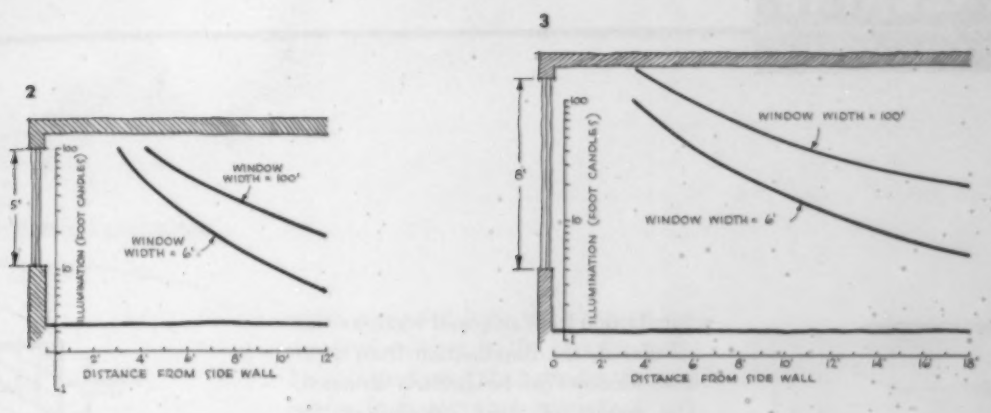
In the design of a system of lighting utilizing daylight, certain criteria must be established in order to insure that there is enough light at different times and for different locations and weather conditions. One criterion, which is easy to use and which yields accurate results, is the assumption that the sky is a uniform source of light with a known brightness value. This can be taken as equal to that obtained in the late afternoon on an overcast day in December. If we assume this value to be 600 foot lamberts (units of brightness), then the sky would be brighter than this value approximately 85 per cent of the daylight hours in the vicinity of 42° north latitude. Values of twice this brightness would be obtained 50 per cent of the daylight hours and values of three times this brightness 15 per cent of the daylight hours.

The assumed value of 600 foot lamberts is the basis for design. Recommended levels of light throughout a room can be obtained for this condition, and when the sky is brighter the illumination levels are proportionately higher. When the sky brightness is less, however, an artificial lighting system should be used to maintain the desired illumination.

Once the problem of daylighting has been reduced to that of calculating the light distribution from a source of uniform brightness, light distribution from different window arrangements can be obtained by the use of mathematical formulas. Following this procedure, the direct component light distribution from side-wall and clerestory arrangements was calculated, and the results were compiled to yield the recommended design principles for clerestory windows which are described below.

The Clerestory Arrangement

A clerestory arrangement usually consists of a side-wall window and a clerestory window mounted overhead (Fig. 1). The problem is then to find the proper relationship between the side-wall and clerestory window, and to determine the clerestory setback, the height of the clerestory window, the room depth, the window positions, etc., in order to obtain the desired illumination level and nearly uniform light distribution. Once these are obtained,



2, 3. Daylight from side-wall windows is maximum near the window sill and decreases as the distance increases. Amount and distribution of light varies with window height, width as shown here

it will be found that for the condition of an overcast sky, the brightness contrasts through the room for almost all daylighting designs will be less than those usually encountered in artificial lighting-system designs.

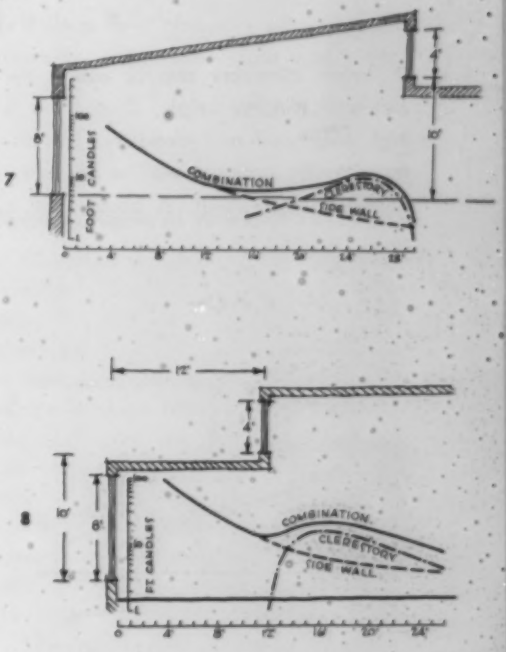
Light Distribution from Side-Wall Windows

First let us consider the case of the side-wall window. The daylight distribution from such a window is at a maximum near the window sill, and drops off as the distance from the window increases (Figs. 2, 3). The amount and distribution of this daylight for any particular time varies with respect to the window height and width and the material in the window opening. The window widths given are for small windows (where the window width is approximately equal to the height) and for wide windows (where the window width is greater than four times the height).

The type of material in the window opening has little effect on the daylight distribution for overcast sky conditions. The light-distribution curves in Figs. 2 and 3 are based on clear or diffusing flat glass or acrylic plastic in the window opening.

Light Distribution from Overhead Windows

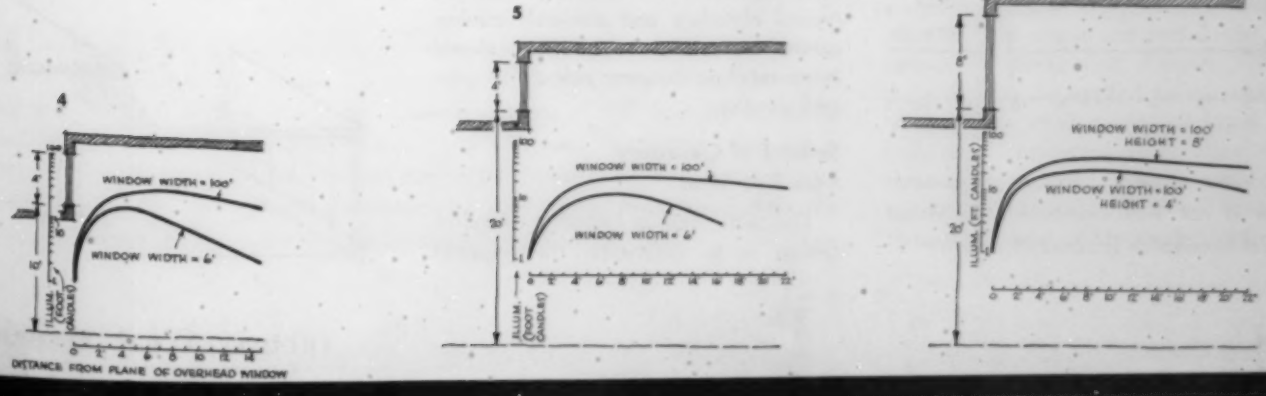
Now let us take the case of overhead or clerestory windows. By the use of the mathematical formulas by which light



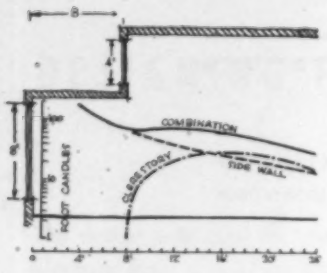
Note: curves are based on illumination at working plane; combination curves show total illumination from side-wall and clerestory windows.

7. Improper clerestory arrangement. When clerestory faces opposite direction from side-wall window, illumination is high near wall and very low near clerestory. Fig. 8. Correct clerestory arrangement. Light from clerestory complements that from the side-wall window to get more even distribution. Window widths were taken as 6 ft. for Figs. 7, 8. Curves for wide windows are similar; see Fig. 10 on following page

4, 5, 6. Daylight directly below clerestory window is zero when window is mounted vertically. Both mounting height and window height affect the distribution of daylight

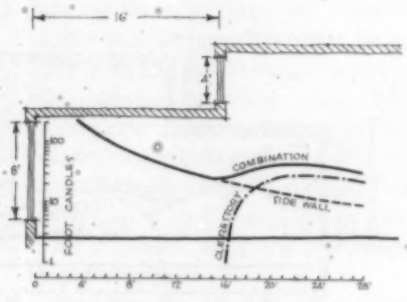


9



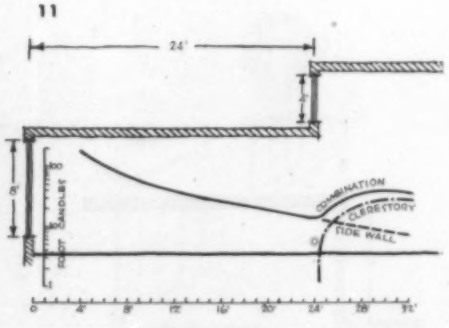
9. When clerestory setback equals the side-wall window height, illumination is high near wall and clerestory, but distance to the opposite wall is limited — illumination at 28 ft. is about 15 ft.-c

10



10. When setback is twice side-wall window height, illumination is well distributed and wall-to-wall distance can be greater than in Fig. 9. Illumination at 28 ft. is about 35 ft.-c

11



11. When setback is too great, illumination is not well distributed. At lowest point illumination is about 15 ft.-c

distribution from side-wall windows was calculated, the illumination from overhead windows can be similarly obtained. The results of these calculations for different arrangements of overhead windows are shown in Figs. 4, 5 and 6.

From these diagrams it will be noted that the illumination directly below the overhead windows is zero when the window is mounted on a vertical plane, and that it increases to a maximum value before tapering off. The position of the maximum varies with the mounting height of the window sill above the working plane (Figs. 4 and 5). Increasing the height of the window itself (distance from sill to top of window) also has some effect on the distribution of illumination (Fig. 6).

Combination of Side-Wall and Overhead Window Arrangements

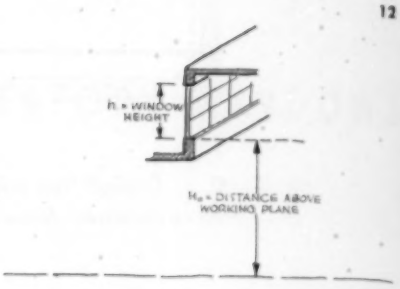
The illumination obtained from the combination of a side-wall window and an overhead or clerestory window can be calculated by adding the values of illumination for each window. Following this procedure, let us consider what is the most desirable plane for mounting the two windows. The combination of a side-wall window on one side of a room with the clerestory window mounted on the opposite wall results in an illumination which is at a minimum at the rear of the room and which is non-uniform throughout (Fig. 7). Now by mounting the clerestory window on the opposite wall, or on the same side as the window wall, but set back from it, a more uniform light distribution can be obtained (Fig. 8).

It will be noted from Fig. 8 that the illumination from the clerestory window complements the illumination from the side-wall window so that a more uniform illumination is obtained. For our first rule, therefore, we can say that *for typical clerestory and side-wall window arrangements, the clerestory window should be mounted on the same side as the side-wall window.*

Setback of Clerestory from Side Wall

The next step in clerestory window design is to determine the required

12



Mounting height of the clerestory window affects light distribution, while height of the window, for a specific mounting height above the working plane, has greater effect on the amount of daylight

setback between the window wall and the plane of the clerestory. The spacing between the planes of the clerestory and side-wall window wall are related to the window heights and widths. Figs. 8, 9, 10 and 11 show the effects of different clerestory setbacks and window widths.

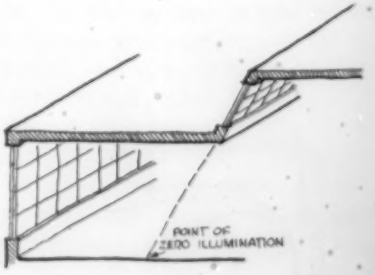
From these diagrams it will be noted that there is an optimum relation between the side-wall window height and the setback for near-uniform illumination. *For narrow windows, the recommended setbacks are of the order of one and one-half times the side-wall window height* (Fig. 8). *For wide windows these setbacks should be about twice the window height* (Fig. 10).

Distance to Back Wall

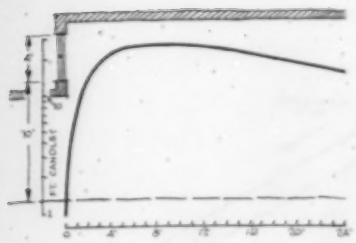
Another factor in the design of clerestory windows is the effective room

Light from sloping clerestory window is zero at the point of intersection of the window plane and the working plane

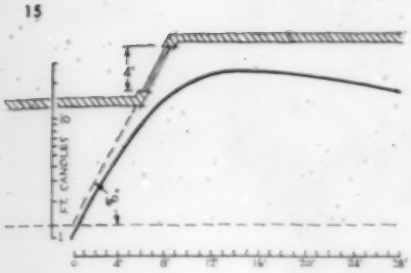
13



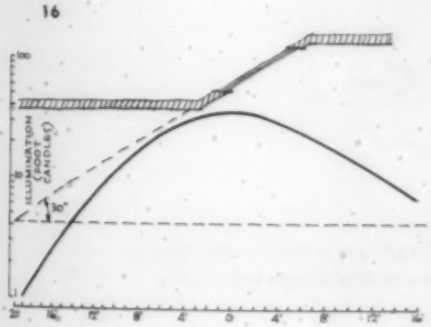
14



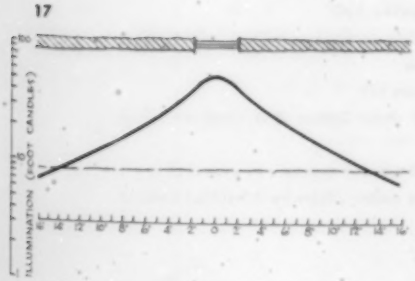
15



16



17



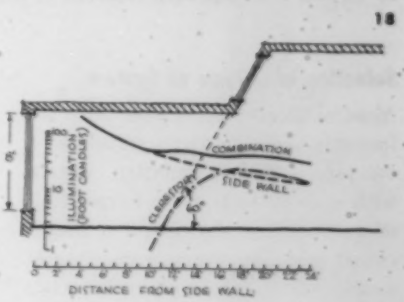
Figs. 14, 15, 16, 17 show how changing the slope of the clerestory affects the light distribution from the clerestory window. For obtaining the best light distribution from side-wall and clerestory windows combined, a clerestory slope of 30° from the vertical is best. When the clerestory window is vertical, the combined illumination curve has a dip in it (see Fig. 10) because the maximum point of the clerestory curve is almost directly above the minimum point. When the maximum point shifts to the right (which happens with a 30° slope) the combination curve becomes flatter (see Fig. 18)

width measured from the plane of the overhead window to the opposite wall. From inspection of the light-distribution curves from overhead windows (Figs. 4, 5 and 6) it will be noted that this effective width (flatter curves give better light distribution) depends upon the clerestory window mounting height. *For typical clerestory arrangements utilizing narrow windows, recommended depth from the plane of a clerestory window to the opposite wall should be approximately equal to the mounting height of the clerestory window above the working plane. For wide clerestory windows, the room depth from the plane of the clerestory window should be approximately one and one-half times the clerestory mounting height. When the area near the back wall is not to be used for critical seeing, these values can be exceeded.*

Height of Overhead Window

It will be noted that the mounting height of the clerestory window has a pronounced effect on the light distribution (Figs. 4 and 5), while the height of the clerestory window for a given mounting height above the working plane has a greater effect on the amount of light (Fig. 6). In order to obtain a uniform and adequate level of light, *the height of the clerestory window should be approximately equal to one-half the side-wall window height, where the sill height of the clerestory window above the working plane is no greater than one and one-half times the side-wall window height. Where the sill height of the clerestory window is of the order of three times the side-wall window height, the clerestory window should be equal in height to the side-wall window.*

18



Best slope for a clerestory window is 30 degrees, giving even light distribution

Sloping Overhead Windows

Changing the slope of the clerestory window also affects the light distribution. In the case of sloping overhead windows, the point of zero illumination is located at the point of intersection of the working plane and the plane of the sloping window (Fig. 13). Changing the slope of the window changes the point of zero illumination as well as the light distribution. Distribution from clerestory windows arranged at slopes of 0°, 30°, 60° and 90° are shown in Figs. 14–17.

The combination of sloping clerestory windows with vertical side-wall windows permits greater variation in room sizes. *By the use of a sloping clerestory window arrangement at an angle of 30° from the vertical, the distance from the side-wall window to the clerestory window can be increased to twice the side-wall window height when narrow windows are used, and two and one-half times the side-wall window height when wide windows are used* (Fig. 18).

Conclusions

The design principles for clerestory lighting described above illustrate how a rigid theoretical approach can be applied to yield simple and useful rules of thumb for daylighting designs. These principles can be applied in the design of clerestory windows for all types of buildings. Engineered daylighting designs make it both practical and economical to achieve buildings well lighted throughout most of the daylight hours.

HEATING SYSTEMS FOR HOUSES

Forced Hot Water Systems: 1—One-Pipe; Types, Equipment

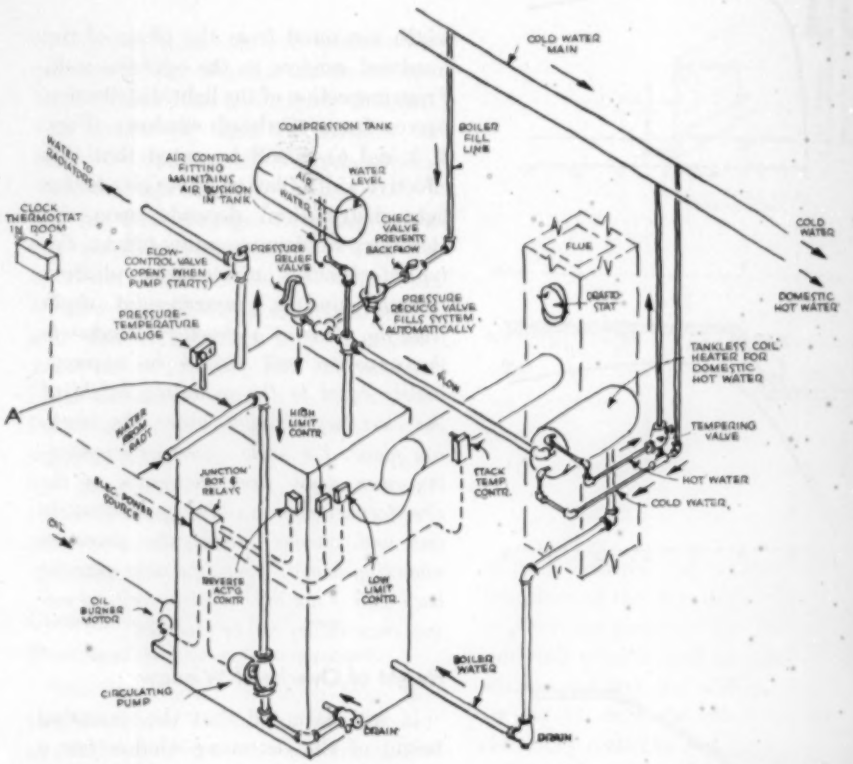
By William J. McGuinness, Professor of Architectural Engineering, Pratt Institute

Selection of a Type of System

Most residences can be served satisfactorily and most economically by a one-pipe forced circulation system with a single loop main. Larger residences call for the use of a multi-circuit one-pipe system consisting of a main without any radiator branches supplying several branch mains each serving a section of the house and returning through a single return line and circulating pump to the boiler. The addition of extra flow control valves and pumps can easily turn this into a zoned system good enough for the largest house or for a small apartment building or similar structure. In very large installations or those calling for the greatest efficiency the two-pipe, reversed-return, forced-circulation system is certainly the most efficient, because the return water is handled very positively by a separate return main and is not able to cool the water flowing to other radiators in the circuit.

Characteristics of Hot Water Heating

Forced systems in which the boiler water is kept hot by water temperature controls are very fast in response to calls for heat. They are much faster than one-pipe steam systems. When the thermostat is satisfied, the circulating pump stops, but the heat emission of the radiators continues at a slowly diminishing rate which is much better than the speedy stopping of a steam system in which all the steam in a radiator has condensed and drawn air into the radiator. The possibility of circulating water at temperatures less than the actual design temperature makes hot water an ideal medium for moderate weather.*



TYPICAL OIL-FIRED BOILER AND EQUIPMENT

For one- or two-pipe forced hot water systems

Note direct main connections (A, no swing joints); expansion not sufficient to cause trouble. Circulating pump is in return line, in either vertical or horizontal run according to pump requirements

Operation

1. When room thermostat calls for heat, oil burner and pump turn on simultaneously
2. If water drops below limiting temperature (160°), reverse-acting control turns off pump until oil burner has raised water temperature
3. Low-limit control turns on oil burner whenever water falls below 160°
4. High-limit control turns off oil burner when water temperature exceeds a high limit (often 200°), thus stabilizing water temperature during capacity operation
5. When room thermostat is satisfied, pump and oil burner turn off
6. Stack temperature control, an emergency control, shuts down burner if it does not ignite promptly
7. Pressure relief valve, an emergency control, opens to relieve any pressure in excess of a set value (often 30 lb. per sq. in.). This valve should be set above boiler, otherwise if it failed it would drain boiler, subjecting boiler to cracking

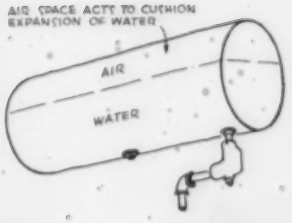
Economy of Installation and Operation

The cost of a pump, flow control valves, special return fittings and larger radiator often make the installation of a hot water system more costly than a steam one-pipe system. Because of the heat-retaining qualities of the circulated water it is usually cheaper to operate a hot water system than it is to operate a one-pipe steam system.

Fittings, Pipe and Covering

Copper tubing is very popular and adaptable to hot water systems and in a great many instances is replacing steel. In these cases bronze and copper solder fittings are often used. It is usual to cover all steel pipe for the conservation of the heat, but

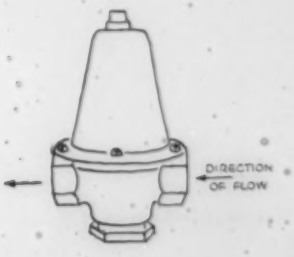
* *A properly designed hot water system is quieter in operation than the best one-pipe steam system. It is free from the frequent complaint that one-pipe steam systems push into the room odor-laden air from the radiators whenever steam comes up.*



COMPRESSION TANK WITH AIR CONTROL FITTING

SELECT TANK SIZE TO FIT SYSTEM

Capacity in sq. ft. of radiation	Tank capacity gallons	Tank dimensions
to 300 sq. ft.	15	12″ x 30″
300 to 500 sq. ft.	18	12″ x 36″
500 to 700 sq. ft.	20	12″ x 42″
700 to 1000 sq. ft.	24	12″ x 48″

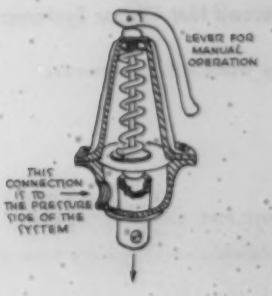


PRESSURE REDUCING VALVE

Fill line to boiler; adds water when pressure drops below 12 lb. per sq. in.

Other side connected to city water pressure (40 to 50 lb. per sq. in.; too high for system)

Full system is needed; it's easy to forget to add water to boiler. This valve adds it automatically

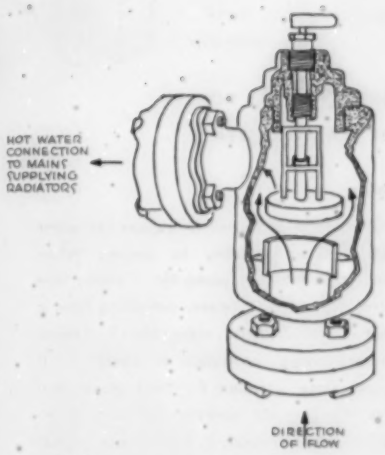


PRESSURE RELIEF VALVE

Spring-loaded diaphragm raises when system pressure exceeds 30 lb. per sq. in., permitting water flow through center tube

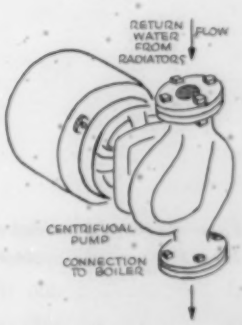
Drip. Valve seldom opens under proper operation, however, drip can empty into dry well or sink, *not* sewer

In systems where compression tank replaces high-gravity tank, pressure-relief valve is needed because system is otherwise closed. If air cushion in compression tank is too small (through improper operation), this valve operates to relieve system and prevent bursting of parts



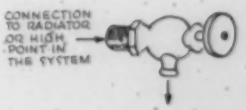
FLOW CONTROL VALVE

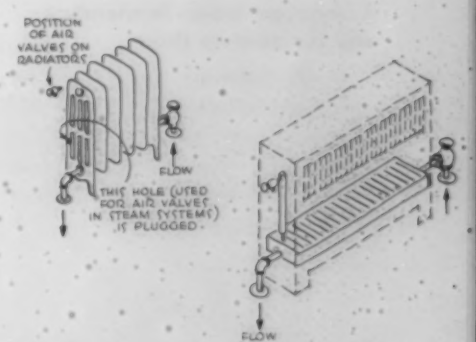
When circulating pump starts, water flow raises the valve seat. When the pump is not operating, it closes against circulation. This is important in summer when hot water must be retained in boiler (for domestic hot water) but must not flow through radiators



CIRCULATING PUMP

Electric motor turns on, forcing water through system, when heat is called for and if water is hot enough (160°). Select pump as directed in TSS page on "Design"





AIR VENT

When opened, pressure forces out air in the high place. When water starts to flow this valve must be closed. Automatic vents are available at slightly higher cost. Note (lower drawing): air vent must be extended high above cast iron or copper convectors to keep air out of the water passages

copper pipe is usually left exposed because it loses heat by radiation at a rate very much slower than steel.

Maintenance

The elimination of air is one of the most important things in the good operation of a hot water job. If the elimination is manually accomplished at the radiators it should be done several times during the heating season. The water level in the compression tank should be adjusted at the same time if this function is not automatic. It is important to provide proper lubrication for the pump. All equipment such as flow control valves, pressure relief valves etc. should be checked for proper adjustment.

The author and editors wish to acknowledge with thanks the assistance of several manufacturers of heating equipment, and of the Institute of Boiler and Radiator Manufacturers. For heating problems beyond the scope of these Time-Saver Standards, the reader is referred to the Institute of Boiler and Radiator Manufacturers, 60 E. 42 St., New York 17, N. Y.

(Continued on page 148)

HEATING SYSTEMS FOR HOUSES

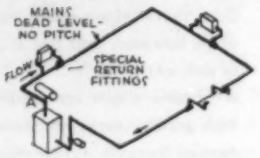
(Continued from page 147)

Forced Hot Water Systems: 2—Design of One-Pipe Systems

By William J. McGuinness

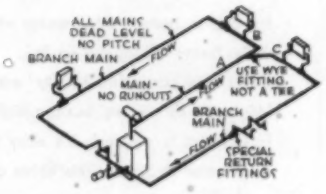
ONE-PIPE SYSTEMS

Radiators receive water from main and discharge back into same main



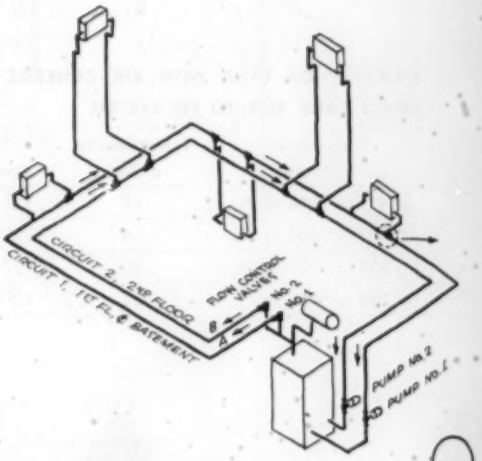
ONE-CIRCUIT ONE-PIPE SYSTEM

Approx. 7 radiators or 40000 Btu maximum



MULTI-CIRCUIT ONE-PIPE SYSTEM

Main *A* is sized to serve entire system; mains *B* and *C* are sized to serve respective circuits; same size held through to boiler. This system, with additional circuits, can serve the largest residence



ZONED ONE-PIPE FORCED HOT WATER SYSTEM

Zoning

An advantage of forced-circulation hot water heating is adaptability to zoning. When Zone 1 calls for heat, pump No. 1 starts; flow control valve No. 1 opens, permitting flow in circuit 1. Flow control valve No. 2 remains shut preventing circulation in circuit 2. If instead, Zone 2 called for heat, pump and valve No. 2 would operate with flow in circuit 2 and not in circuit 1. Simultaneous action is possible. Separate thermostats operate pumps 1 & 2. Joint use is made of one boiler whose water is kept hot by water temperature controls

Basement and Second Floor Heating

Aside from zoning, sketch also illustrates several uses of special return tees

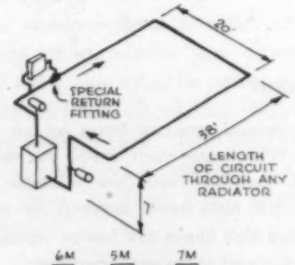
1. *For 1st floor radiators,* use of one special return fitting is common & riser size is found in Table 3, Section E. Two fittings are possible, in which case riser size is found in Table 3, Section A, and is smaller for same capacity

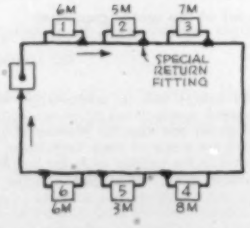
2. *For 2nd & 3rd floor radiators,* use of two special return fittings is common & riser is found in Table 3, Sections B & C. If one fitting is used, larger riser is chosen from Table 3, Sections F & G

3. *For downfeed risers to basement,* use of two special return fittings is necessary; size of riser is shown in Table 3, Section D

1. Average Water Temperature and Temperature Drop

In the following typical example, an average water temperature of 197 F will be assumed and the temperature drop in the system will be taken as 20 F. Water will leave the boiler at 207 F and return at 187 F.





2. Water Flow Required to Make up Hourly Heat Loss in the System

The total heat loss is 35,000 Btu per hour. Dividing this by 9600 (see TSS on design of a two-pipe system) the answer is 3.63 gal. per minute.

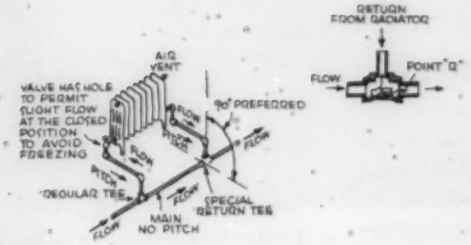
3. Length and Equivalent Total Length of System

The length of the circuit through any radiator is:

Length	38
	38
Width	20
	20
Height	7
	7
Runouts (rad.)	8
	138 ft.

To arrive at the total equivalent length of system including the resistance of fittings, multiply by 1.5 (add 50 per cent). Total equivalent length is 207 ft.

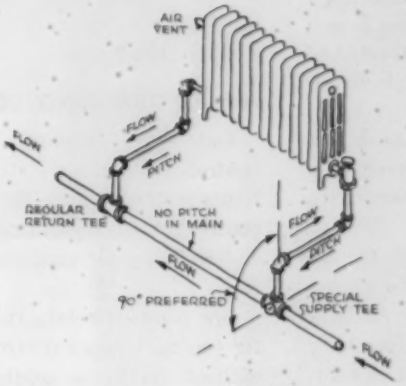
HEATING SYSTEMS FOR HOUSES

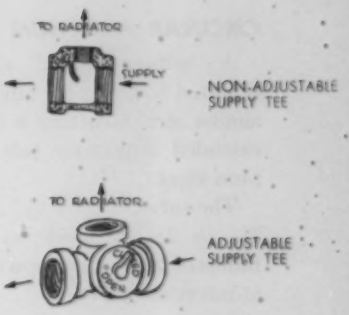


SPECIAL RETURN TEE

For one-pipe systems only; insert constricts flow, diverts some supply water into supply tee. Venturi action at *R* pulls water out of radiator. Note that colder water flows at bottom of main; hence radiator branches should be 90° to horizontal

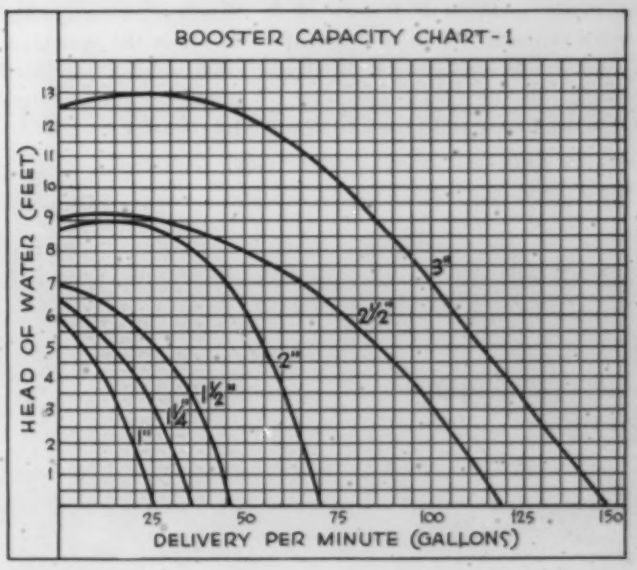
Courtesy Bell & Gossett Co.





SPECIAL SUPPLY TEES can be used instead of special return tees

Courtesy H. A. Thrush & Co.



4. Select a Pump

Referring to Chart 1, it is found that the selection of a 1¼-in. pump will result in the need to maintain in the system frictional resistance the equivalent of 6.2 ft. of head.

5. Pressure Drop in the System

Section A of Table 1 indicates that for 6 ft. of head (the closest to our requirement) and a length of 200 ft. the friction loss will be 350 millinches per foot in the system.

6. Selecting Size of Main

In the 350-millinch column, Table 1, Section B, it will be found that a 1-in. main will carry 59,000 Btu per hour which is adequate. Our loss is 35,000 Btu. It is to be noted that 1 in. is a minimum for mains in one-pipe systems. In one-pipe systems the main size, selected on the basis of the total capacity, is carried at this size through the system and back to the boiler.

7. Sizing Runouts and Risers

Risers in one-pipe systems must be a little larger than for two-pipe systems. Table 2 lists the sizes needed for various capacities.

The largest radiator in the system carries 8000 Btu per hour and will

(Continued on page 153)

PRODUCTS for Better Building

CIRCULAR ALUMINUM ROOF

A "self-supporting" aluminum roof reported to have the same strength as a similar steel structure is constructed of extruded aluminum tubes and aluminum sheet.

The tubes, 2½ by 2½ in. outside and 2⅛ by 2⅛ in. inside, are curved to a radius of 100 ft. and form transverse ribs at intervals of 5 ft.

Aluminum sheet is riveted to the structure, and the joints may be welded if necessary to render the whole airtight. Since under symmetrical loading they support themselves by tensile and compressive stresses, aluminum roofs of this type are said to be capable of a span between 500 and 600 ft.

An experimental model 83 ft. in diameter with a 9-ft. rise was built at ground level and tested to a super load of 27 lbs. per sq. ft. by covering the dome with bricks and taking vertical deflection readings at nine points of the framework.

Intended primarily for oil or chemical storage tanks, the roof can be rapidly constructed. Six men can erect the framework and weld all shoes to the outer support ring in one day, according to the manufacturer. Aluminum Construction Co., Norfolk House, Strand, London, England.

AIR CONDITIONING CONTROL

Designed to simplify and standardize controls on heating, cooling and ventilating systems is the *Magic Dial* master control system now being made for installation by air conditioning contractors.

One compact rotary switch in a master control cabinet controls the system without relays or additional manual switches. The switch is operated simply by turning to one of four positions — "Off," "Fan Only," "Cooling" and "Heating."

Standardized instruments and a new numbered wire system simplify installation. The master cabinet has terminal blocks numbered to correspond with the numbers on each of the other 13 instruments in the system, and every inch of each wire is imprinted with the same number as the terminals to be connected by the wire.

The Magic Dial system is designed for use in both commercial and residential buildings. Midwest Automatic Control Co., 510 Third St., Des Moines, Ia.

SPIRAL SASH BALANCE

A spiral sash balance designed to permit tension adjustment at any time without removing the attaching bracket can be installed while the sash is in or out of frame.

Described as quiet in operation and easy to install, the *Spirex* has a patented flat steel spring which requires only three or four turns to tension it for a 24 by 24-in. sash.

Spirex balances are made to fit any standard size groove, either round or square. They are guaranteed for the life of the building. Tubes are finished by the electro-galvanized method, and coils are separated from each other and specially coated to eliminate friction and reduce noise to a minimum. Rods are cadmium plated. Caldwell Mfg. Co., 56 Industrial St., Rochester 4, N. Y.

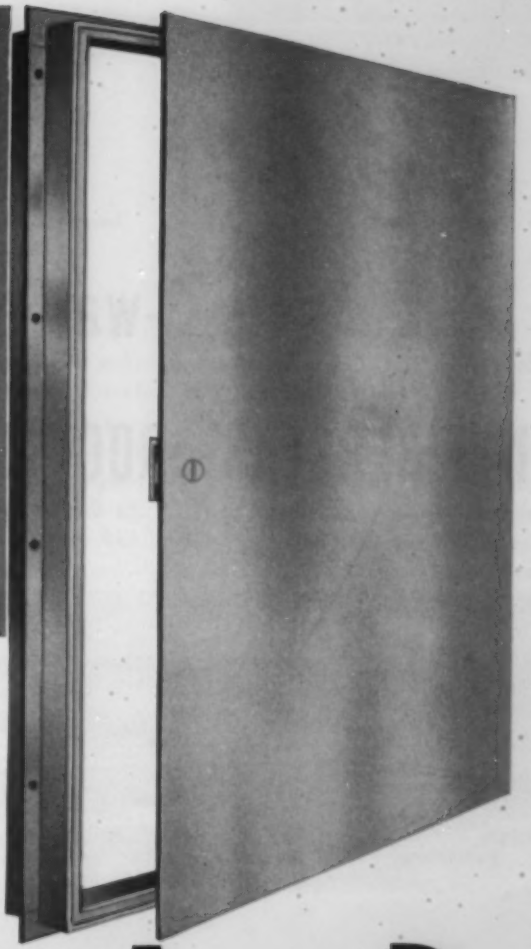
SHALLOW WELL PUMP

Increased capacity and assurance of great reserve for peak loads and emergencies are assets claimed for the new *Varijet Bullet* shallow well centrifugal ejector pump.

A diaphragm-operated needle valve

(*Continued on page 178*)

Left, above: rib structure of experimental aluminum roof in position at ground level. After tests for deflection readings were made (directly below) by covering the roof with bricks, dome was stripped for distortion readings (left, below)



Ready to install • No special framing • Painted with rust-inhibiting prime coat • Concealed hinges • Flush, screw-type lock • 11 sizes — from 8⅜" x 8⅜" to 24⅜" x 36⅜" • For plastered or non-plastered walls • With or without expanded metal wings

IN CINCINNATI'S TERRACE PLAZA HOTEL

low-cost Milcor Steel Access Doors

provide instant access to all key points..., yet blend invisibly into the wall when closed

Milcor Steel Access Doors are flush to the wall. Papering or painting right over them is easy. Quickly and easily installed, they tie right to the metal lath, actually save on building time.

Specify Milcor Steel Access Doors on all your jobs. Consult the Milcor Catalog in your Sweets File for details.

Tear out this coupon and mail today!

Inland Steel Products Co., 4035 W. Burnham St., Milwaukee 1, Wis.

Send me, without obligation, a Milcor Manual with full details on Milcor Steel Access Doors and other products in the complete Milcor Metal Lath line.

Name..... Title.....

Company.....

Company Address.....

City..... (.....) State.....

F-329

INLAND STEEL PRODUCTS COMPANY

Formerly Milcor Steel Company

4035 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

Baltimore 24, Md. • Buffalo 11, N. Y. • Chicago 9, Ill. • Cincinnati 25, Ohio • Cleveland 14, Ohio
Detroit 2, Mich. • Kansas City 8, Mo. • Los Angeles 23, Calif. • New York 22, N. Y.
Rochester 9, N. Y. • St. Louis 10, Mo.

Pesco

gets 3-way economy

with FIBERGLAS* ROOF INSULATION

JOB DATA

Architect: McGeorge, Hargett & Associates

General Contractor: Albert M. Higley Co.

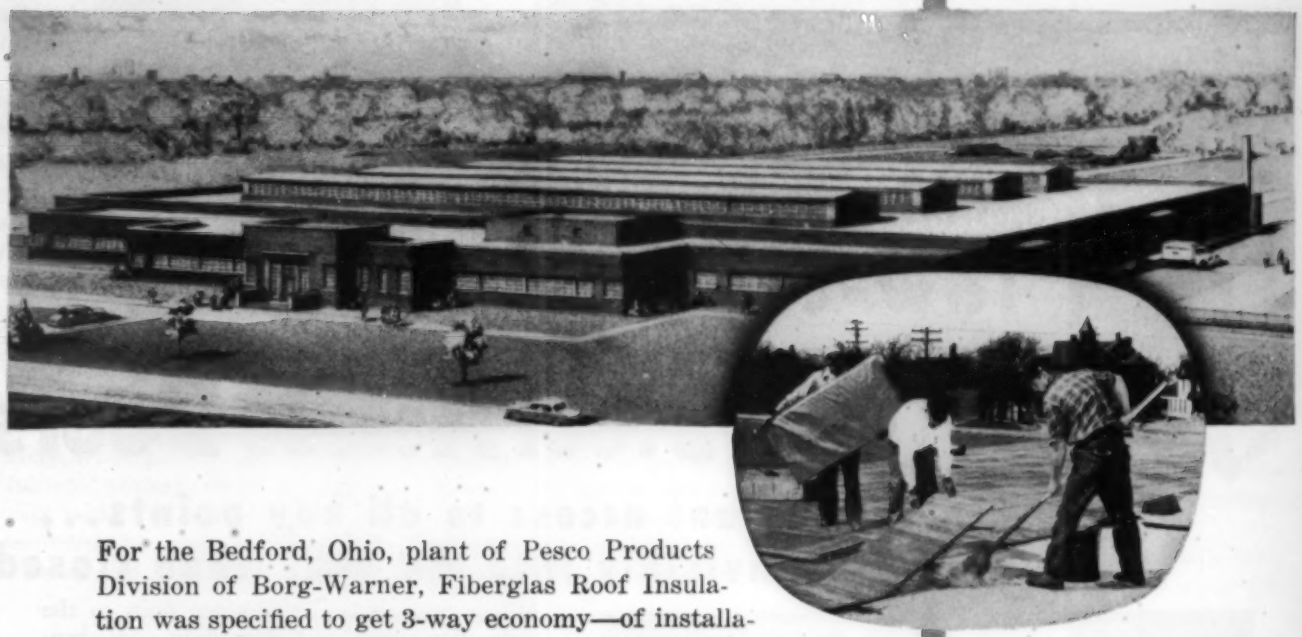
Roofing Contractor: Industrial Roofing Co.

Roof Deck: Truscon Ferroboard welded to bar joint.

Slope: Monitor-type roof.

Roof Insulation: Fiberglas Roof Insulation. 173,900 sq. ft. of 13/16" material on factory. 28,100 sq. ft. of 1" material on office. 4,000 sq. ft. of 1" material on boiler house.

Roofing: 4-ply composition tar and slag.



For the Bedford, Ohio, plant of Pesco Products Division of Borg-Warner, Fiberglas Roof Insulation was specified to get 3-way economy—of installation, of performance, of maintenance.

Competitively priced with organic materials, the installed cost of Fiberglas Roof Insulation is easy on the budget. Because of its superior insulating efficiency, it produces increased savings in heating and air conditioning costs.

Roof maintenance costs can be cut, too, because Fiberglas Roof Insulation, with its fibers of ageless glass, will not rot, warp or buckle. It contributes to longer roof life.

For this 3-way kind of economy in roofs you design, specify Fiberglas Roof Insulation. Applied by leading roofing contractors everywhere. Write for manual B4.1.1. Owens-Corning Fiberglas Corporation, Dept. 831, Toledo 1, Ohio.

PRODUCT DATA

Thermal Efficiency: Conductance is .33 for 13/16" material, .28 for 1" material at 75° F. mean temperature.

Immunity to Moisture: Efficiency unimparied after laboratory equivalent of 75 years of weathering.

Dimensional Stability: Basically composed of glass fibers. Will not warp, swell, shrink or buckle.

Light Weight: Weighs only 1.15 lb./sq. ft. in 13/16" thickness, 1.31 lb./sq. ft. in 1" thickness.

*FIBERGLAS is the trademark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for products made of or with glass fibers.

OWENS-CORNING

FIBERGLAS

BUILDING MATERIALS

BUILDING INSULATION • ACOUSTICAL TILE AND BOARD • ROOF INSULATION • MEMBRANE FABRIC • ALSO BASIC MATERIALS FOR SIDING, ETC.

HEATING SYSTEMS FOR HOUSES

(Continued from page 149)

Forced Hot Water Systems: 4—One-Pipe Design Tables Continued

By William J. McGuinness

require ½-in. supply and return. Because this is a minimum it will be used for all the radiators. In larger systems there would be a noticeable difference between the risers in one- and two-pipe systems.

8. Selection of Radiators

An average temperature of 197 F will result in emission of 200 Btu per square foot of cast iron radiation or cast iron convectors. Dividing the hourly heat loss in each room by 200, the number of square feet of radiation can be determined. Radiator No. 1 will have to provide 30 sq. ft. In the entire system there will be 175 sq. ft.

9. Selection of Boiler

For 175 ft. of connected radiation it is possible to select a hot water boiler, specifying the type of firing. Allowances for pipe loss, pickup and normal domestic hot water requirements are usually included by the manufacturer in his ratings.

(Continued on page 155)

TABLE 1 — PIPE SIZING TABLE FOR MAINS

1 PIPE FORCED CIRCULATION HOT WATER SYSTEMS WITH SPECIAL RETURN FITTINGS

SECTION A

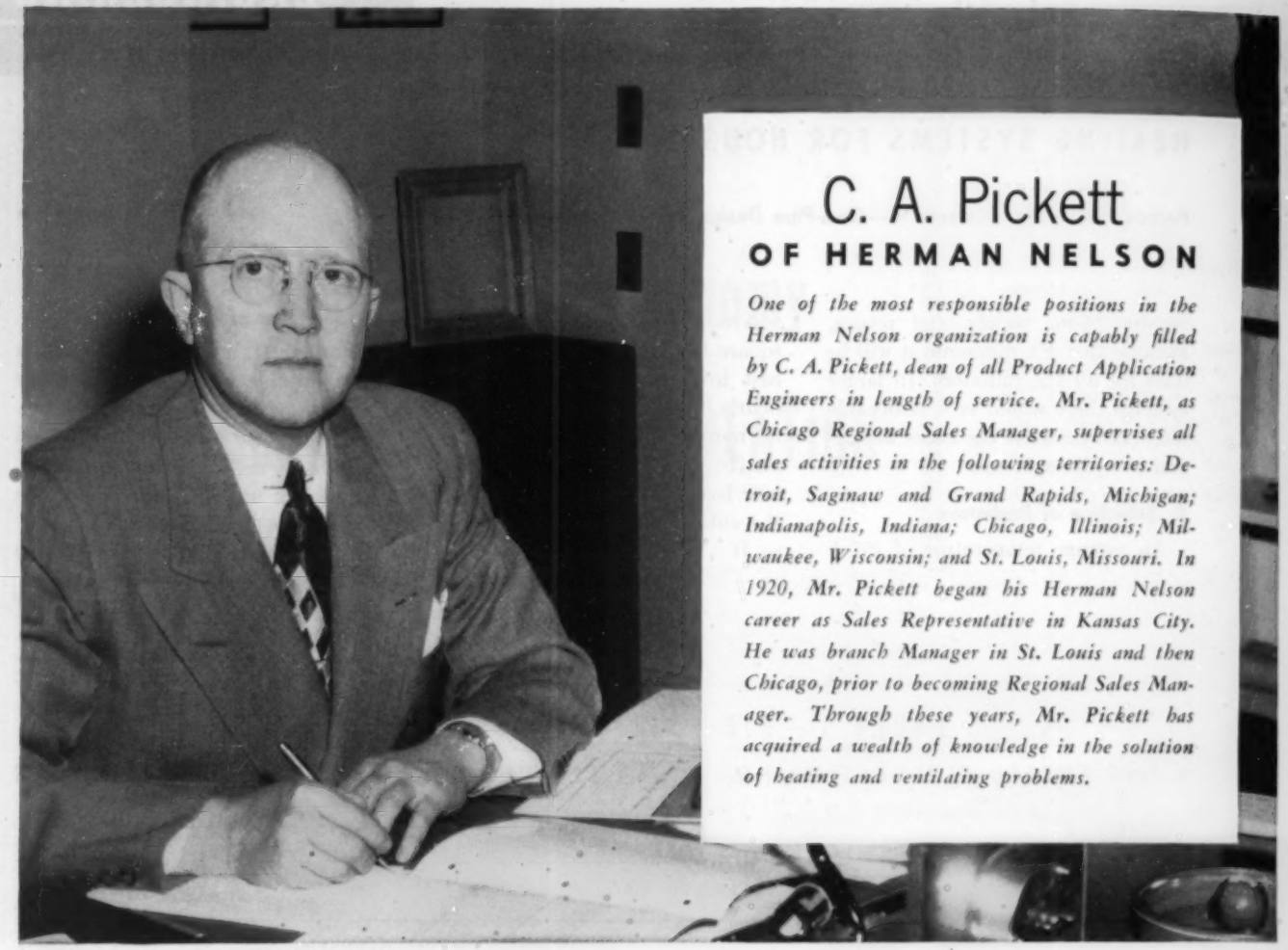
BOOSTER HEAD PRESSURES	TOTAL EQUIVALENT LENGTH OF PIPE IN FEET								
2′	40	48	60	68	80	96	120	160	240
2½′	50	60	75	86	100	120	150	200	300
3′	60	72	90	103	120	144	180	240	360
3½′	70	84	105	120	140	168	210	280	420
4′	80	96	120	137	160	192	240	320	480
4½′	90	108	135	154	180	216	270	360	540
5′	100	120	150	171	200	240	300	400	600
5½′	110	132	165	188	220	264	330	440	660
6′	120	144	180	206	240	288	360	480	720
6½′	130	156	195	223	260	312	390	520	780
7′	140	168	210	240	280	336	420	560	840
7½′	150	180	225	257	300	360	450	600	900
8′	160	192	240	274	320	384	480	640	960
8½′	170	204	255	291	340	408	510	680	1020
9′	180	216	270	308	360	432	540	710	1080
9½′	190	228	285	325	380	456	570	760	1140
10′	200	240	300	342	400	480	600	800	1200
10½′	210	252	315	360	420	504	630	840	1260
11′	220	264	330	377	440	528	660	880	1320
11½′	230	276	345	394	460	552	690	920	1380
12′	240	288	360	411	480	576	720	960	1440

SECTION B (Based on 20° Temperature Drop)

PIPE SIZE	MAIN CAPACITIES (In Thousands of BTU)								
	MILINCHES								
	600	500	400	350	300	250	200	150	100
1″	80	71	64	59	53	48	42	37	31
1¼″	170	160	140	130	118	102	90	78	63
1½″	260	240	210	185	175	156	140	121	94
2″	500	450	410	360	322	294	261	227	182
2½″	810	750	670	610	551	523	460	385	310
3″	1600	1400	1300	1150	1000	900	800	680	550
*3½″	2300	2100	1850	1650	1500	1350	1190	1020	825
*4″	3200	2900	2600	2300	2100	1950	1700	1350	1140

* Trunk main capac ities only. Fittings are not made larger than 3″.

NOTE — The figures shown in these tables apply to both steel pipe and Type L copper tubing, as capacity differences are not sufficient to cause design errors.



C. A. Pickett
OF HERMAN NELSON

One of the most responsible positions in the Herman Nelson organization is capably filled by C. A. Pickett, dean of all Product Application Engineers in length of service. Mr. Pickett, as Chicago Regional Sales Manager, supervises all sales activities in the following territories: Detroit, Saginaw and Grand Rapids, Michigan; Indianapolis, Indiana; Chicago, Illinois; Milwaukee, Wisconsin; and St. Louis, Missouri. In 1920, Mr. Pickett began his Herman Nelson career as Sales Representative in Kansas City. He was branch Manager in St. Louis and then Chicago, prior to becoming Regional Sales Manager. Through these years, Mr. Pickett has acquired a wealth of knowledge in the solution of heating and ventilating problems.

CONSCIENTIOUS, experienced men like C. A. Pickett of Chicago are found throughout Herman Nelson's nation-wide organization. These men are familiar with all types of heating and ventilating problems involving industrial, commercial and institutional buildings.

In larger cities all over America, Herman Nelson Branch Managers and Product Application Engineers work closely with Architects, Engineers and Contractors in the application and installation of Herman Nelson Products. These key men are either graduate engineers or possess years of engineering experience.

In order to further improve the company's service to you, Herman Nelson has also developed an experienced Distributor and Stocking Jobber organization. These firms — numbering over 200 — have been carefully selected to render prompt, efficient service. Members of their organizations are thoroughly trained in the application of Herman Nelson Products and are anxious to serve you.

Backed by the undisputed quality of Herman Nelson Products and 43 years' experience confined exclusively to the manufacture of heating and ventilating equipment . . . this organization is your assurance of prompt, personal attention, sound judgment and honest recommendations.

THE HERMAN NELSON CORPORATION

Since 1906 Manufacturers of Quality Heating and Ventilating Products

MOLINE, ILLINOIS

HEATING SYSTEMS FOR HOUSES

(Continued from page 153)

Forced Hot Water Systems: 3—One-Pipe Design Tables

By William J. McGuinness

TABLE 2 — PIPE SIZING TABLE FOR RISERS

1 PIPE FORCED CIRCULATION HOT WATER SYSTEMS WITH SPECIAL RETURN FITTINGS

(Based on 20° Temperature Drop)

CAPACITY OF RISERS WITH TWO FITTINGS (In Thousands of BTU)

	PIPE SIZE	MILINCHES 600	500	400	350	300	250	200	150	100
		Upfeed Risers—First Floor (See Note 1)								
A	½"	23	22	19	18	17	16	14	12	10
	¾"	43	41	37	33	30	28	26	22	20
	1"	80	73	64	60	55	50	45	39	32
	1¼"	180	140	120	110	100	93	80	74	62
		Upfeed Risers—Second Floor (See Note 2)								
B	½"	16	15	14	13	11	10	10	8	7
	¾"	31	28	25	24	22	21	18	15	13
	1"	58	52	45	43	37	33	32	28	25
	1¼"	122	108	92	90	79	72	68	59	50
		Upfeed Risers—Third Floor (See Note 2)								
C	½"	14	12	11	10	9	8	8	7	6
	¾"	26	24	23	21	19	18	16	14	12
	1"	47	43	38	36	34	31	29	28	25
	1¼"	99	91	81	77	70	66	59	56	46
		Downfeed Risers (See Note 3)								
D	½"	16	15	14	12	11	9	8		
	¾"	33	30	26	24	20	18	14		
	1"	58	52	43	41	34	29	25		
	1¼"	117	106	86	83	69	59	49		

FOR LESS THAN 200 MILINCH RESISTANCE. BASE CALCULATIONS ON PUMP WITH HIGHER HEAD PRESSURE.

NOTE — The figures shown in these tables apply to both steel pipe and Type L copper tubing, as capacity differences are not sufficient to cause design errors.

CAPACITY OF RISERS WITH ONE FITTING (In Thousands of BTU)

	PIPE SIZE	MILINCHES 600	500	400	350	300	250	200	150	100
		Upfeed Risers—First Floor								
E	½"	16.5	15	13	12	11	10.6	10	9.2	8
	¾"	29	27	25	24	21	19	18	17	15
	1"	50	48	44	41	37	35	33	31	28
	1¼"	95	88	78	76	69	62	55.6	48	40
		Upfeed Risers—Second Floor								
F	½"	11	10	9	8	7	7	6	6	4
	¾"	20	19	17	16	14	13	12	11	11
	1"	34	32	29	28	25	24	22	21	18
	1¼"	70	68	59	57	51	49	45	43	36
		Upfeed Risers—Third Floor								
G	½"	9	8	7	7	6	6	6	5	4
	¾"	18	16	14	14	12	12	11	10	9
	1"	31	29	28	27	24	22	21	20	18
	1¼"	63	60	56	52	48	45	43	41	36

READ THESE NOTES CAREFULLY BEFORE SIZING RISERS

NOTE 1. 1st FLOOR UPFEED RISERS—Capacities shown in the table are based upon horizontal branches not more than 3 feet long, with stubs 18" long, or a total of 9 feet of pipe. 6 elbows, one valve and one union ell, and one C.I. radiator are added for the equivalent length.

For each additional 10 equivalent feet of pipe, move 2 milinch columns to the right.

NOTE 2. 2nd and 3rd FLOOR UPFEED RISERS—Capacities shown are based upon horizontal branches not more than 3 feet long, with risers 10 feet high and 20 feet high respectively. 8 elbows, one valve and one union ell, and C.I. radiator are added for the equivalent length.

For each additional 10 equivalent feet of pipe, move 2 milinch columns to the right.

NOTE 3. DOWNFEED RISERS—Capacities shown are based on a drop of seven feet to the center of the radiator, with not over 3 feet total in horizontal branches, 6 elbows, one valve and one union ell and one C.I. radiator. For every additional 2 feet of vertical drop, move one column to the right in milinch table.

On downfeed jobs the main MUST be pitched up and a vent installed on end of main.

MANUFACTURERS' LITERATURE

Concrete Joists

Lith-I-Bar Lightweight Reinforced Concrete Joists. Shows typical applications and method of construction using concrete joists made with electrically welded reinforcing and lightweight aggregates. Advantages are discussed. The technical section takes up "Concrete Slabs and Precast Joists Act as Monolithic T-Beams," and includes a table of safe loads for different joist sizes as well as specifications. 24 pp., illus. Lith-I-Bar Co., Holland, Mich.*

Decorative Metal

Gold Leaf in Architecture. Describes and illustrates practical applications of gold and other metallic leaf. Gives comprehensive descriptions, specifications, coverage data and suggested uses for gold, silver, aluminum and palladium leaf. Preparation, maintenance and application information is also included. 4 pp., illus. Hastings & Co., Inc., Hastings Bldg., 2314 Market St., Philadelphia 3, Pa.*

Acoustical Products

Fiberglas Acoustical Materials. Covers the forms, properties and methods of installing Fiberglas acoustical materials, including plain and perforated tile and board. Describes use of Fiberglas thermal insulations for acoustical purposes. 8 pp., illus. Owens-Corning Fiberglas Corp., Toledo 1, Ohio.*

Bathroom Equipment

Catalog G. Illustrates new line of vitreous china lavatories and closet combinations, undersink cabinets, the *Vanette*, as well as the porcelain enameled ware and brass supply fittings. The catalog is intended to serve as a reference guide in writing specifications. A roughing-in and dimensional data section is included. 94 pp., illus. Briggs Mfg. Co., 3001 Miller Ave., Detroit 11, Mich.

Furniture

Sterling Contemporary. Shows complete line of *Formica* realwood topped, modern occasional tables. Besides the cigarette- and liquor-proof top, these tables have many other functional features, described in this bulletin. 6 pp., illus. Sterling Furniture, Inc., 1611 W. Cortland St., Chicago 22, Ill.

Hot Water Heating

Catalog CC-549. Describes and illustrates the various components that make up the Thrush Flow Control System of forced circulation, hot water heat. Contains capacity tables, performance charts, size and weight tables. 8 pp., illus. H. A. Thrush & Co., Peru, Ind.*

Electrical Wiring

Neasbestus Wire for Hot Spots (Catalog No. 509). Revised edition of a catalog on wires and cables which have asbestos or asbestos and varnished-cambric insulation, suitable for electrical installations where extreme heat, corrosive fumes and fire hazards are present. Tables list sizes and other wire properties. 36 pp., illus. National Electric Products Corp., Chamber of Commerce Building, Pittsburgh 19, Pa.*

Triangle Conduit, Building Wire, Cablex (Condensed Catalog No. 49). Presents basic data on major items in line of wire, cable and steel conduit raceways. Describes different types of insulations available. Tables list sizes and weights. 12 pp., illus. Triangle Conduit & Cable Co., Inc., 1923 Jersey Ave., New Brunswick, N. J.

Wall Coverings

The Magic of Scenic Wallpapers. Illustrates and describes 11 scenic patterns including hunt scenes, landscapes, historical scenes and Chinese motifs. In addition there are three patterns shown especially adapted to bath and powder room decoration, as well as a pattern having an accurate map of the world for use in dens and libraries. 8 pp., illus. Schmitz-Horning Co., Cleveland 3, Ohio.

Lighting

Sylvania Electric-Fluorescent Fixtures. Covers complete line of fixtures and equipment including industrial, commercial and troffer fluorescent fixtures, starters, lampholders and starter sockets. Contains detailed descriptions, diagrams, charts on technical data and specifications on every fixture. A supplementary section tells "How to Plan a Fluorescent Lighting Installation." A chart provided shows the amount of illumination required for approximately 80 typical applications. 74 pp., illus. Sylvania Electric Products, Inc., 500 5th Ave., New York 18, N. Y.*

Lighting Fixture Digest. Guide to a line of fluorescent lighting fixtures including louvered shielding luminaires, emphasis lights, diffusing luminaires, and steel and aluminum troffers. The catalog is presented in chart form with descriptions, cross-sectional diagrams, catalog numbers and list prices. 8 pp., illus. Solar Light Mfg. Co., 1357 S. Jefferson St., Chicago 7, Ill.

Wood Frame Construction

Architects Aids for Better Building Specification Sheet No. 1. First of a series of specification sheets for architects, engineers and builders on the applications of *Trip-L-Grip* framing anchors for light wood frame construction. Sheet No. 1 illustrates the application of anchors in attaching joists to headers and headers to trimmers. There will be six sheets in the series, one issued each month. 1 page, illus. Timber Engineering Co., 1319 18th St., N. W., Washington, D. C.

Glass Blocks

The Mark of a Modern Building—PC Glass Blocks. Pictures many applications of glass block in industrial, commercial and public buildings. Separates glass block patterns into decorative and functional groups, discussing specific advantages of each. Contains technical data, specifications, and modular construction details for exterior and interior panels and for sash and block combinations. 40 pp., illus. Pittsburgh Corning Corp., 307 Fourth Ave., Pittsburgh 22, Pa.*

Washroom Facilities

The New Bradley Duo-Washfountain (Folder K711). Illustrates applications of *Duo-Washfountain*, designed to take the place of two "single-person" wash basins for small washrooms in factories, stores, schools, offices, etc.; one sprayhead takes the place of four faucets. All

(*Continued on page 194*)

* Other product information in Sweet's File, 1949.

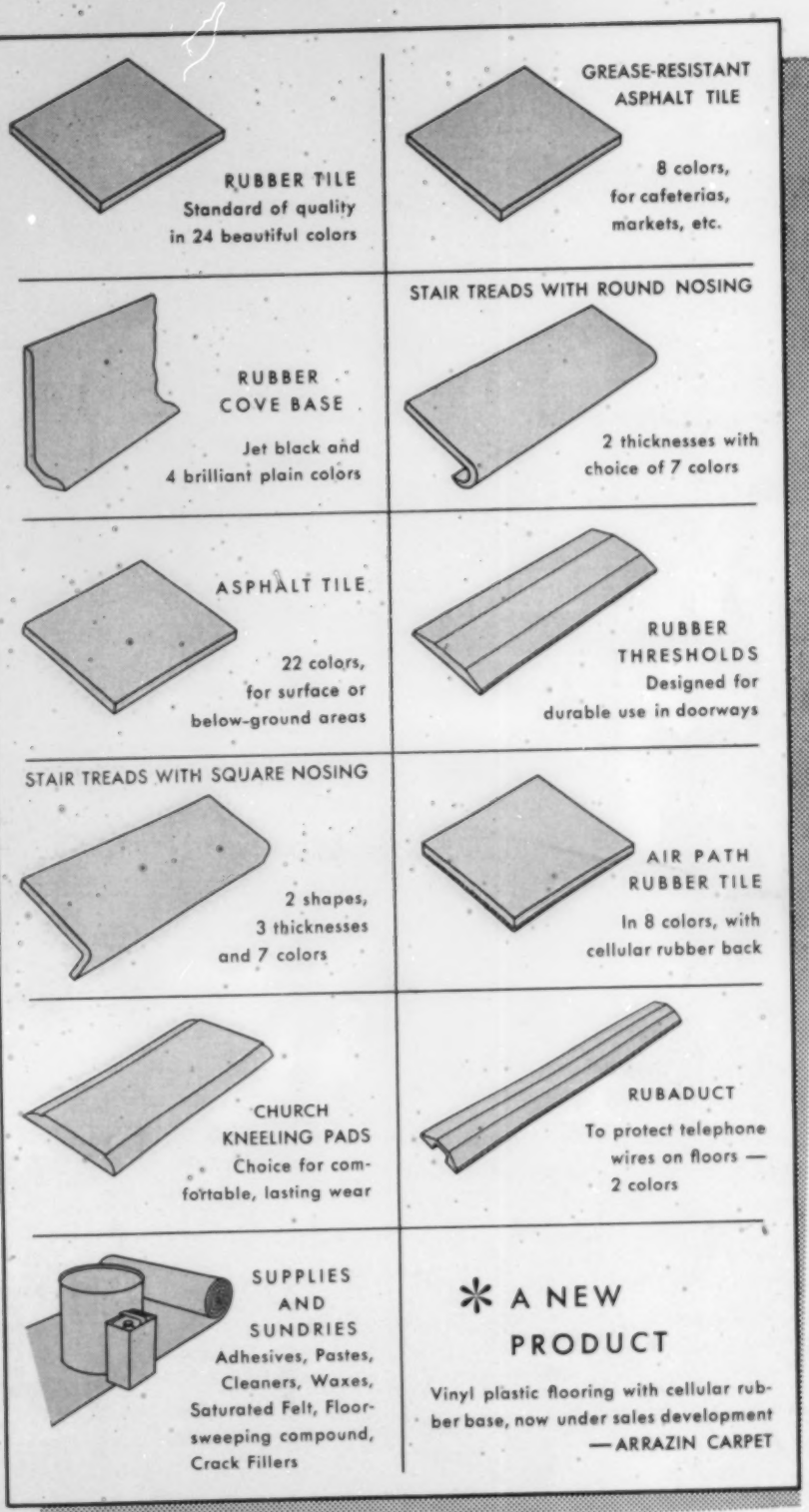
Lockwood Greene Engineers, Inc.
Engineers and Achitects

Jas. H. Kolbrook,
Associate Architect

DOOR CLOSERS BY *LCN*

CLOSERS CONCEALED IN HEAD FRAME • *COURIER-JOURNAL & LOUISVILLE TIMES BUILDING, LOUISVILLE*

LCN CATALOG 11-E ON REQUEST • LCN CLOSERS, INC., 466 WEST SUPERIOR STREET, CHICAGO 10



HOOD . . . for all 12!

For variety, quality, originality of product and consumer acceptance, the combination of Hood and B. F. Goodrich means *better* flooring. That's why leading architects and designers specify Hood products. See Sweet's or write for catalog.

Hood Rubber Co.
A DIVISION OF
B.F.Goodrich
WATERTOWN, MASS.

HOOD—*FOR RUBBER TILE* . **HOOD**—*FOR ASPHALT TILE*

THE RECORD REPORTS

(*Continued from page 20*)

ence A. Mills, professor of experimental medicine at the University of Cincinnati.

The house, deliberately lacking conventional air conditioning, furnace and insulation, will be heated through radiant channels and is being equipped by various individuals and firms.

SMALL HOMES RESEARCH

A 12 months' investigation into planning and building techniques has been undertaken by the Small Homes Council of the University of Illinois in an attempt to make possible both variety in house design and economy in construction. The research is being carried on under a grant provided the University by the newly-organized Lumber Dealers Research Council.

Although essentially a planning project, the investigation is based on research data accumulated from the actual construction of more than 40 houses on which the Small Homes Council has conducted time studies.

Results of the study will be a series of basic house plans to be distributed by lumber dealers throughout the country.

QUALITY HOUSING INCREASE

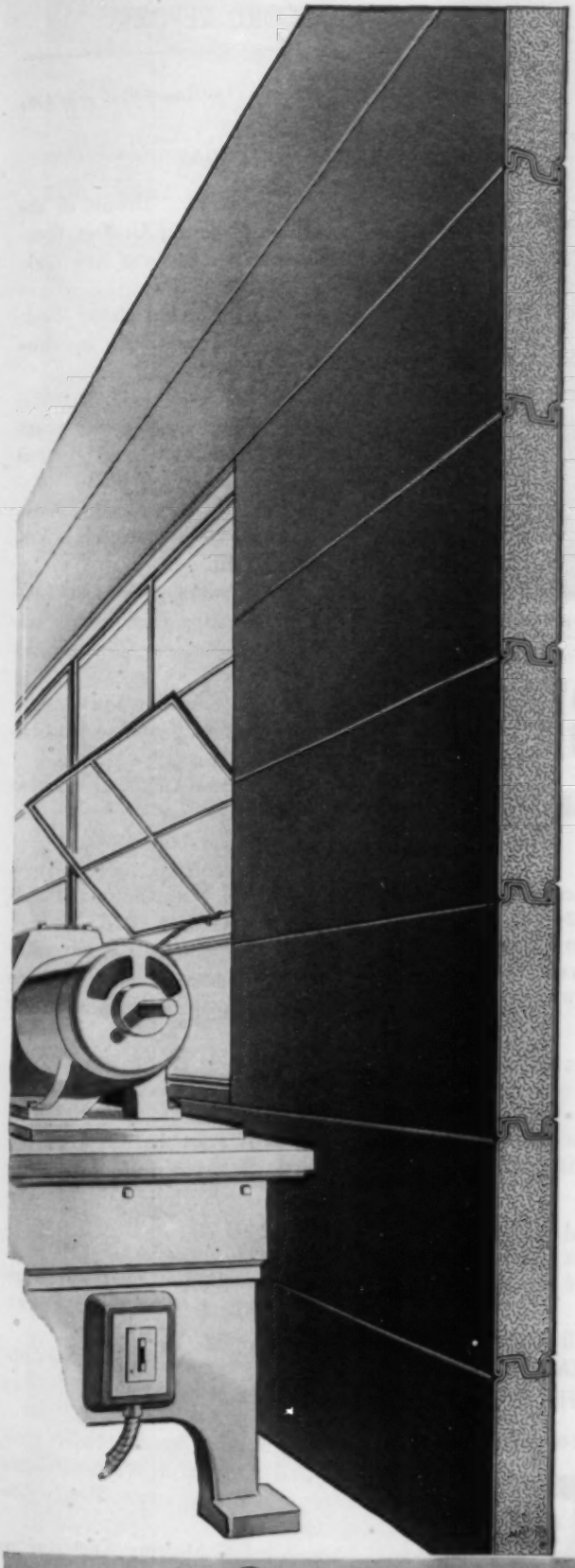
Despite a year of reduced residential building volume, there is one class of home buyers which has increased since 1948, Thomas S. Holden, President of F. W. Dodge Corp., stated recently in an address before the Semiannual Meeting of the Southern Furniture Manufacturer's Assn. at Blowing Rock, N. C.

"These are the owners who have houses built to order for their occupancy," he said. "In the first four months of this year F. W. Dodge Corp. reported for the 37 eastern states 20,404 single-family house projects in this group, nearly 10 per cent more than in the corresponding period of last year."

The average construction cost of these houses was $11,570 as against an average of $8000 for the houses-built-for-sale in the same period, he reported. This is a quality market within the single-family house market.

Presumable causes for this increase, Mr. Holden said, were the owners' discovery that shortages, irregular deliveries, overtime and low productivity of labor have disappeared as factors increasing costs. Moreover, he added, odds are that this quality house volume will continue to increase.

(*News continued on page 160*)



How to get INSULATED WALLS

as low as $1.25 per square foot

The secret lies in two specifications:

- Laying up the walls with large-area, interlocking, load-carrying metal sections—using recommended standard details.
- Using sections factory-filled with top-grade insulation to save on-the-site time.

That means Fenestra* Metal Building Panels . . . used in many types of buildings because they combine faster (hence, less costly) construction with remarkable durability. These points explain the basic structure of this good-looking wall:

1. Fenestra Type C Panels (steel or aluminum), are laid one upon another, the double tongue and groove forming an excellent side lap. Panels can also be used vertically.
2. Panels are welded or bolted to structural members.
3. Insulating material completely packs the panels. A strip of felt, fabricated into the panel, prevents metal-to-metal contact between inner or outer face.
4. Type C Panels form a smooth, continuous prime-painted surface, ready for further paint or other surface materials if desired.

Fenestra Panels also give you economy, durability and faster construction for floors, ceilings and roofs. Use Type D or AD for floors and ceilings. For roofs, either Type D, AD or famous Holorib Roof Deck, according to your requirements. See Sweet's Architectural File (Section 3c/3). Or mail the coupon for full information. Engineering help available on request.

*Trademark

Use our 25 years' experience in Metal Panel Engineering

Fenestra

METAL BUILDING PANELS

ROOFS · WALLS · FLOORS

DETROIT STEEL PRODUCTS COMPANY
Building Panels Division
Dept. AR-9, 2252 E. Grand Boulevard
Detroit 11, Michigan

☐ Please have an engineering representative call.

☐ Please send me, without obligation, information on Fenestra Building Panels.

Name _____

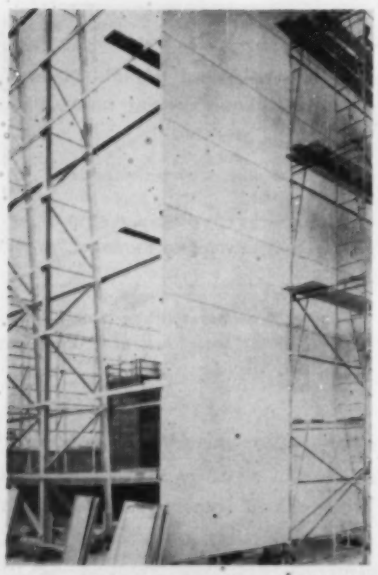
Company _____

Address _____

GENERAL PETROLEUM BUILDING, LOS ANGELES, CALIFORNIA

for an Harmonious Blend

SEAPORCEL *PORCELAIN ENAMEL* WAS SELECTED



Topping this new magnificent building is an installation of over 24,500 square feet of Seaporcel Porcelain Enamel . . . yes, virtually 30 tons of this mechanically fastened material of permanence and beauty.

Matching the varied shades and textures of this structure's terra cotta exterior, lightweight Seaporcel Porcelain Enamel completes in perfect harmony the impressive dignity of this distinctive new building.

Holes to accept letters and Pegasus figures were burned in by gas torch on the job after porcelain enamel was erected.

FOR JOBS LARGE OR SMALL
SEAPORCEL IS PRACTICAL • EASILY CLEANED
DURABLE • ECONOMICAL • FIRE RESISTANT

Write today for catalogue showing application and current jobs.

SEAPORCEL METALS, INC.
Formerly Porcelain Metals, Inc.
28-06 BORDEN AVENUE, LONG ISLAND CITY 1, N. Y.
Complete A. F. of L.-Metal Fabricating & Enameling Shop
West Coast Representative: McFarland & Co., 1206 West 7th Street, Long Beach 13, Calif.

SEE OUR CATALOG IN SWEET'S

*Reg. U. S. Pat. Off.

Seaporcel
Member Porcelain Enamel Institute, Inc.

THE RECORD REPORTS

(*Continued from page 158*)

ON THE CALENDAR

Through Sept. 30: "Details of the City — Photographs by Godfrey Frankel," Museum of the City of New York, New York City.

Sept. 11–17: National Home Week, featuring housing exhibits in cities throughout the country.

Sept. 11–Nov. 20: "For Modern Living," exhibition of contemporary design in home furnishings and objects, Detroit Institute of Arts, Detroit, Mich.

Sept. 11–Oct. 10: 3rd Annual Chicagoland Home and Home Furnishings Festival, Chicago, Ill.

Sept. 19–23: National Technical Conference, Illuminating Engineering Society, French Lick Springs Hotel, French Lick, Ind.

Sept. 25–Oct. 2: Construction Industries Exposition, Sam Houston Coliseum, Houston, Texas.

Sept. 26–29: 51st Annual Convention of the American Hospital Association, Hotel Statler, Cleveland, Ohio.

Sept. 26–Oct. 1: Home Fashion Time, exhibition by the National Retail Furniture Association, Chicago, Ill.

Sept. 28–Dec. 4: 20th Anniversary Exhibition: Modern Art in the Modern World, Museum of Modern Art, New York City.

Sept. 30–Oct. 9: Television and Electrical Living Show, Coliseum, Chicago, Ill.

Oct. 10–14: First Pacific Area National Meeting, American Society for Testing Materials, Hotel Fairmont, San Francisco, Calif.

Oct. 17–21: Midwest General Meeting, American Institute of Electrical Engineers, Netherland Plaza Hotel, Cincinnati, Ohio.

Oct. 17–21: 31st National Metal Congress and Exposition, American Society for Metals, Cleveland, Ohio.

Oct. 24–28: 37th National Safety Congress and Exposition, featuring home safety sessions, Morrison Hotel, Chicago, Ill.

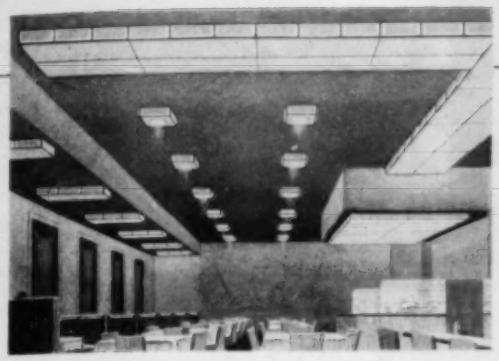
Nov. 2–4: Fall Meeting, American Society of Civil Engineers, Washington, D. C.

Nov. 4–13: 24th Arizona Art Exhibition, Arizona State Fair, Phoenix, Ariz.

Nov. 13–16: 16th Annual Meeting, National Association of Housing Officials, Copley Plaza Hotel, Boston, Mass.

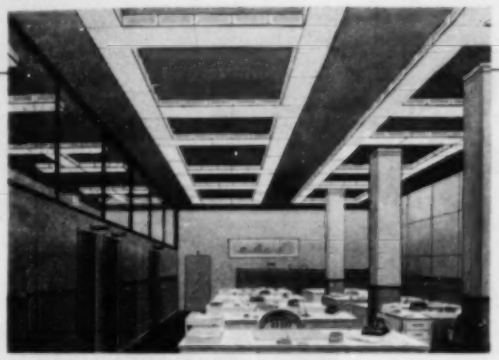
(*News continued on page 162*)

☆ makes possible limitless pattern designs



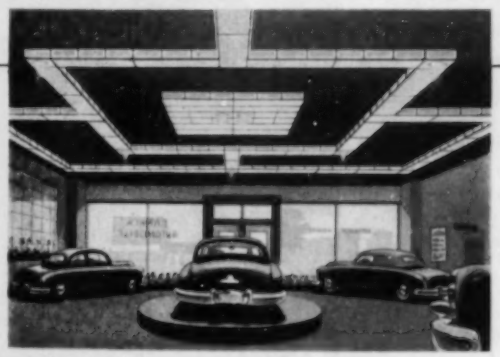
☆ custom-fits any room shape or proportions

the revolutionary
new idea in lighting



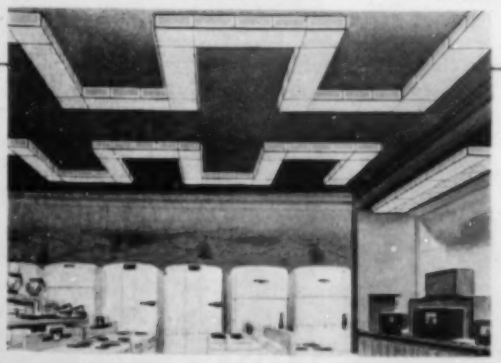
☆ provides unlimited linear flexibility

MITCHELL
module
REG. U.S. PAT. OFFICE

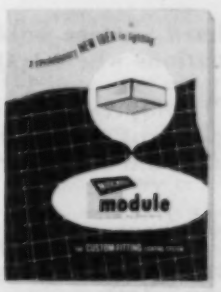


☆ mixes many light sources in one uniform system

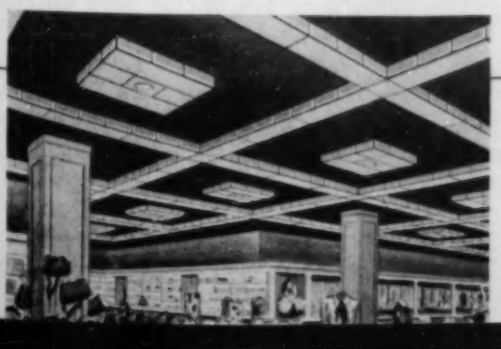
the **custom-fitting**
lighting system



☆ features equal low brightness throughout



Write today for free 20-page MODULE brochure which gives every detail of this exciting new lighting development. Use coupon below.



☆ provides harmonious matched appearance throughout

MITCHELL MANUFACTURING COMPANY
2525 Clybourn Avenue, Chicago 14, Illinois
Send full details on MITCHELL MODULE

Firm Name .....

Address .....

This floor starts second quarter-century of service

WRIGHT RUBBER TILE Sets New Record for Durability

After having served 25 years under heavy traffic in one location, this WRIGHT RUBBER TILE floor was taken up and relaid in a newly remodeled suite of offices. Those who have seen it say it still looks like a brand-new floor.

Outstanding service records, such as this one, are being made by WRIGHT RUBBER TILE installations all over the country. That is why WRIGHT RUBBER TILE is called the "100-year floor."

WRIGHT RUBBER TILE is resistant to grease and acids and is undamaged by burning cigarettes. A swish of a damp mop keeps it shining clean. Because of its outright quality all the way through, leading architects specify WRIGHT RUBBER TILE wherever quality and service are requisite: in homes, in churches, schools, hotels and stores.

Wright is the *only* rubber tile made in two degrees of hardness:

WRIGHTEX — the soft rubber tile for residences, hospitals and churches.

WRIGHTFLOR — the hard surface rubber tile for offices and institutions where traffic is heavy

***and* WRIGHT-ON-TOP Compression Cove Base — the perfect complement to any color scheme now comes in black and all 20 tile colors.**

A note on your letterhead will bring you complete information, technical data and samples of WRIGHT RUBBER TILE. Simply address the WRIGHT MANUFACTURING CO., 5205 Post Oak Road, Houston 5, Texas.

WRIGHT RUBBER TILE

Floors of Distinction

THE RECORD REPORTS

(*Continued from page 160*)

BUILDING NOTES

Extend Structure Into Lake

The foundation of a 13-story apartment house will extend 100 ft. into Lake Michigan when the building, now under construction in Chicago's Lincoln Park area, is completed. A breakwater at this point will abut the future boundary line of Lincoln Park, expected to be expanded by filling in the lake in the near future. To be known as the Sherard Apartment building, the structure will provide an open-air, lake-front location for sunbathing and recreation purposes. Architects for the apartment house are Charles W. Nichol & Associates.

New 42-story skyscraper is under construction at 1407 Broadway in the Times Square area. Kahn & Jacobs, Architects

100 Park Avenue Building

A record in skyscraper construction progress has been signalized with flag-raising ceremonies marking completion of the steel framework of the 36-story, fully air-conditioned office building now under construction at 100 Park Avenue, New York City, site of the old Murray Hill Hotel. The ceremony took place less than five months after the steel framework on the tall building, which extends along the full block front between 40th and 41st St., had been started on March 1. Kahn & Jacobs are the architects for the structure.

(*Continued on page 164*)

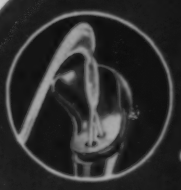
Oh boy... IT'S JUST MY SIZE!

... the new Halsey Taylor line of LO-LEVEL Coolers, the right height for children

HERE at last is a drinking water cooler *designed with the child in mind!* It's the new Halsey Taylor LO-LEVEL *the little cooler for little people!*

Just the right height for children, it is ideal for cafeteria use because of foot-pedal operation, so the child can hold his tray and still fill his glass with water. Thus the LO-LEVEL promotes faster serving and less confusion where many children gather.

Developed by a house that has specialized for years in the manufacture of fountains and coolers, the LO-LEVEL is noted for its economy in operation and maintenance, condensing units being of the hermetic-seal type, requiring no oil and self-regulated.



Halsey Taylor health-safe projectors on all models!

The LO-LEVEL comes in various models . . . with one projector and one glass filler, or with two or more glass fillers, for cafeteria use; and with two projectors where desired exclusively for drinking purposes. Write for further information.

THE HALSEY TAYLOR CO., WARREN, OHIO

Largest Exclusive Manufacturer of Drinking Fountains in the World

Convenient

Foot-pedal operation makes it handy for children. Stainless steel top and splash tray on all cafeteria types assure convenience and cleanliness. Halsey Taylor inbuilt quality provides a welcome freedom from servicing troubles!

S-3

THE LITTLE COOLER FOR LITTLE PEOPLE

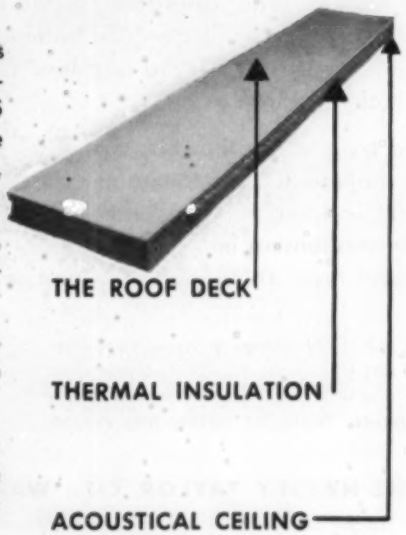
Buildings under construction for permanent U. S. Naval Hospital at St. Albans, Queens

Save $1

OUT OF EVERY $5 by using the *Durisol* Insulated Roof Plank

This roof plank combines so many functions in one material...all at one low installation cost...that **$4 does the work of $5** as compared with other materials. Note the 3-in-1 advantages of this light-weight, precast, factory-coated plank:

1. Fireproof, reinforced, cement-surfaced, and ready for application of the built-up roofing.
2. Because Durisol itself is such an effective barrier against heat losses, no additional insulation is required.
3. Noise-deadening ceiling at no extra cost... distinctive and pleasing in appearance, with a sound absorption coefficient of 0.87 at 512 cycles.



DURISOL is made from chemically mineralized wood fibres bonded with Portland cement and moulded under pressure. It is unaffected by moisture and is proof against rot, mould, vermin, termites—proved incombustible by laboratory tests.

Thickness	Width	Maximum Span	Weight per sq. ft.	Long Edge	Load
3¼"	16"	6'8"	15 lbs.	Tongue and Groove	40 lbs. per sq. ft. live load with high safety factor.
4¼"		8'	18 lbs.		

For complete information, write for folder (A.I.A. File Number 4-K). Also see catalog 3c/13a, Sweet's File Architectural, 1949.

DURISOL, INC. 420 Lexington Avenue, N. Y. 17, N. Y.

Naval Hospital

A force of approximately 1000 workers will be occupied for about two years in the construction of the new $15 million U. S. Naval Hospital at St. Albans, Queens, N. Y., object of the largest lump-sum contract ever awarded by the Navy's Bureau of Yards and Docks. The new hospital will be the only Naval hospital in the greater New York area and will be of steel frame and reinforced concrete construction on concrete foundations. Exterior walls will be of brick with granite and limestone trim. The operating suite will be air conditioned with humidifiers to control the relative humidity at 55 to 60°. The hospital will consist of nine buildings and will include a six-story administration and treatment building, six three-story ward buildings, a betatron therapy building and a two-story building for hospital personnel. Designers of the project are York & Sawyer and builders awarded the contract are Thompson-Starrett Co., Inc.

Goethe Festival Bowl

An open air bowl at Aspen, Colo., has been designed by Eero Saarinen for use in the recent Goethe Festival. The bowl is covered by a tent, with sides that roll down in case of showers, and seats 2000 people. Flower gardens are located between seats and stage and behind stage, separating it from artist's dressing rooms. The seats are a sloping semicircle with a large triangular stage, in graduated levels, jutting sharply outward.

AT THE COLLEGES

Award Winners

Winning design in the nationwide Catholic mission church competition was submitted by S. S. Granger, Architect, of Glendale, Calif. The contest was launched by the Second National Catholic Building Convention and Exposition, sponsored in June by St. Joseph's College, Rensselaer, Ind. Plan is keyed for construction cost of around $20,000. Mr. Granger was awarded a $1000 bond as prize. Second place was won by Joseph J. Sherer, of Milwaukee, Wis., formerly an architectural student at Notre Dame. William J. Ruoff, Notre Dame student, won third place in the contest.

John Herman VonGunten has been named winner of the John Stewardson Memorial Scholarship's 45th competition. Mr. VonGunten is a 1949 graduate of the University of Pennsylvania's Department of Architecture and a re-

(*Continued on page 166*)

Standard, carried-in-stock Type A Convectors give heating installations that rich, custom-built look—AT BUDGET PRICES.

Simplified method of recessing convectors

With the convector trend swinging toward the *recessed* type of installation, a new Trane booklet on "How to recess Type A Convectors" is of special interest and value.

Recessed Trane Convectors have always been preferred over free standing units for the better homes, but before the introduction of the all-purpose Type A, they were premium type, custom-built. Now it is practical to deliver this better-looking, space-saving kind of convector heating for lower priced homes as well.

Trane Type A Convectors—at regular prices—make this premium heating fit the modest budget. Trane Type A's—instantly available from distributors' stock—eliminate custom-built delays.

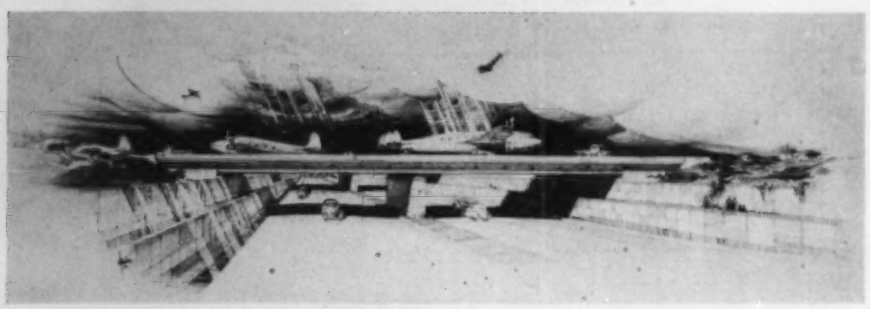
These units have universal appeal. Easy for the architect to specify; easy for the contractor and builder to buy, handle and install. And, with the distributors' stocking problems in mind, we made Type A an all-purpose unit, to be used on either steam or hot water, free standing *or recessed*.

Recess Trane Type A's! The new recessing booklet shows each step, with actual installation photographs. Short cuts, cost-reducing methods of providing this luxury heating at budget prices. Answers for your questions. Ask your Trane sales office, or write direct to the factory.

THE TRANE COMPANY . . . LA CROSSE, WIS.

Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment —Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties . . . In CANADA, TRANE COMPANY OF CANADA LTD., TORONTO.

The recessing questions of architect, builder, and heating contractor are answered by word and by picture in "How to recess Type A Convectors". Write for your copy.



Airport taxiway at N. Y. International Airport. Clarke, Rapuano & Holleran, Architects

Your "Shortest Cut" to the Finest Laboratory ...without wasting a Dollar!

Send for the New KEWAUNEE BOOK of Hospital Casework & Laboratory Furniture

Includes typical floor plans and elevation drawings

A Few of the Many Kewaunee Installations

St. Mary's Hospital, Rochester, Minn.
Wesley Memorial Hospital, Chicago, Ill.
Presbyterian Hospital, Chicago, Ill.
City Hospital, Baltimore, Maryland
Eye, Ear, Nose & Throat Hospital, New Orleans, La.
Mobile Hospital, Mobile, Ala.
Naval Medical Center, Bethesda, Maryland
Veterans Hospital, Fort Hamilton, New York
Greenbrier Hotel, White Sulphur Springs, W. Va.
Mercy Hospital, Jackson, Michigan
Hahnemann Hospital, Philadelphia, Pa.
Flow Memorial Hospital, Denton, Texas
Kings Daughter's Hospital, Staunton, Va.
Marion County Hospital, Columbia, Miss.
Divine Providence Hospital, Williamsport, Pa.
Hospital of St. Raphael, New Haven, Conn.
St. Albans Naval Hospital, St. Albans, New York
Northern Indiana Hospital, Westville, Indiana
St. Joseph's Hospital, Menominee, Mich.
West Tennessee T. B. Hospital, Memphis, Tenn.

See what Kewaunee's method of mass-production and matched-unit assembly plan has to offer you. See how by reducing engineering and installation time we give you true economy without any sacrifice of quality.

For a laboratory of streamlined beauty, time-saving conveniences, and lasting service, equip with—

Kewaunee Casework and Laboratory Furniture

Write for the New Kewaunee Catalog of Hospital Casework and Laboratory Furniture

The services of Kewaunee Laboratory engineers are available to you without cost or obligation.

Kewaunee Mfg. Co.
C. G. Campbell, *President*
5046 S. Center St. Adrian, Michigan
Representatives in Principal Cities

cipient of a First Mention and a Second Medal from the Beaux Arts Institute of Design during his college studies as well as one of two memberships offered by the T-Square Club of Philadelphia. Among the problems constituting the basis of award was the design of a "church center" to house churches of three specified denominations on a triangular site.

Winner of another University of Pennsylvania scholarship is Julius Walter Roth, who has been awarded the Henry Gillette Woodman Scholarship, founded in 1918, which will provide funds towards the expenses of a year's travel in Europe. Mr. Roth received the degree of Bachelor of Architecture in August and was a finalist in the Lloyd Warren Prize Competition of the Beaux Arts this year.

Otto Bauer-Nilsen, of Norway, has been awarded first prize in the Frederick Mueller Competition, University of Cincinnati Department of Architecture award. The Competition was established by the Cincinnati Chapter, A.I.A., in memory of one of its late members. The competition problem called for the design of a music center in Eden Park. Second prize winner was Charles G. Isaacs, with honorable mentions going to Claire Day and Leonard Cohron.

Olindo Grossi, chairman of the Pratt Institute Department of Architecture, has been awarded the Brunner Scholarship of $2000 given by the New York Chapter, A.I.A. Under the award, Mr. Grossi will organize and produce an architectural exhibit to be shown in 54 New York City high schools during the next five years.

Special Courses

Courses in basic and advanced estimating will be offered in the fall semester (Sept. 28, 1949 to Feb. 2, 1950) of the Evening Courses in Architecture at Columbia University. The basic course includes plan reading, reading of symbols and material determination, professional short cuts and limits of accuracy. The advanced course covers the development of a system of estimating and its application to various types of building operations, comparative economics of various materials and structural systems and other subjects.

Faculty Appointments

Jacques C. Brownson, of Aurora, Ill., has been appointed to the position of instructor in city planning in the Depart-

(*Continued on page 168*)

You don't have to shop around... Allegheny Stainless is available in every form you may need

WHATEVER you want, it's available in Allegheny Metal—from the finest of wire to heavy plates, castings and forgings, including sheets, strip, bars, shapes, tubes—*everything!*

That's not only handy, but advantageous: one reliable source, one undivided responsibility, one well-known standard of quality and uniformity. Furthermore, we're steadily improving supply facilities—you can get Allegheny Metal promptly in any grade, form or finish.

When you're in the market, keep it in mind to specify Allegheny Metal, the pioneer stainless steel. And remember, wherever you use it, Allegheny Metal looks better, lasts longer, works out to be cheapest in the long run.

Complete technical and fabricating data—engineering help, too—yours for the asking.

ALLEGHENY LUDLUM STEEL CORPORATION

The Nation's Leading Producer of Stainless Steel in All Forms

AL

Pittsburgh, Penna. . . . Offices in Principal Cities

Allegheny Metal is stocked by all Jos. T. Ryerson & Son, Inc., Warehouses

ment of Architecture at Illinois Institute of Technology.

George E. Danforth, instructor in Architecture at Illinois Institute of Technology, has been promoted to the rank of assistant professor.

William E. Dunlap, of Waukegan, Ill., has been named instructor in architecture at the Illinois Institute of Technology.

James M. Hofgesang has been appointed instructor of architecture at Illinois Institute of Technology.

OFFICE NOTES

Offices Opened, Reopened

Frank Andrews, Architect, announces the opening of offices for the practice of architecture at the Hanna Building, Cleveland 15, Ohio.

A. D. Elia, Architect, has opened an office for the practice of architecture in the M. & T. Bank Bldg., Portage Rd. & Falls St., Niagara Falls, N. Y.

Alwin S. Kolm, Architect, has opened an office at 222 River Ave., Holland, Mich.

Morgan & Bobisch, Consulting Engineers, have announced the opening of offices at 320 Pine Ave., Long Beach 12, Calif.

New Addresses

The following new addresses have been announced:

William B. Harvard, Architect, John B. Dodd, Associate, 2723 Central Ave., St. Petersburg, Fla.

E. W. Howell Co., builders, 101 Park Ave., New York, N. Y.

William Schorn Associates, Inc., and William Francis Schorn, Architect and Naval Architect, 501 Madison Ave., New York, N. Y.

New Firms, Firm Changes

Charles E. Asbury has recently been added to the firm of Lundeen & Hilfinger, Bloomington, Ill., architects.

Grover W. Dimond, Jr., Donald S. Haarstick and Louis R. Lundgren have announced the formation of a firm of architects to be known as Dimond, Haarstick & Lundgren with offices at 416 Endicott on Fourth St., Saint Paul 1, Minn.

W. Parker Dodge Associates, Architects and Engineers, has succeeded the firm of J. Russell White at 109 State St., Albany 7, N. Y.

Gerhard Peterson, A.I.A., and Edward Sovik, have formed a corporation for the practice of architecture. Address is: 1406 Forest Ave., Northfield, Minn.

Thomas, Grainger & Thomas, Architects, have announced the change of the firm name to Grainger, Thomas & Barr with offices at the Arcade Bldg., Seattle 1, Wash.

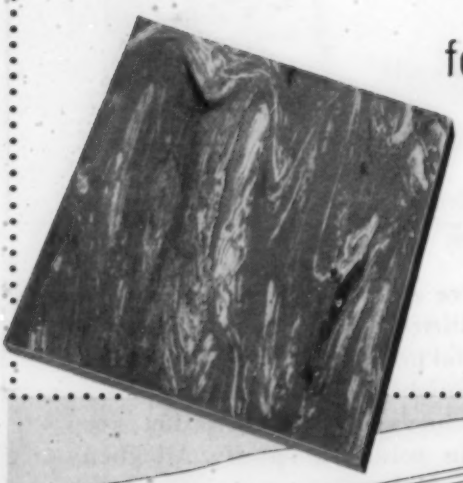
ADDENDA

In the article, "Architects Design for Industry" (June 1949 issue of the RECORD), the name of Donald Deskey Associates was inadvertently omitted as supervisors of the design and engineering of the kitchen unit pictured on page 104. Heywood Wakefield Co. were the manufacturers of the molded plywood chairs pictured on pp. 102 and 110.

Herring-Hall-Marvin Safe Co. wish to correct the architectural credit for the Michigan National Bank Building featured in their advertisement, page 148, July issue of the RECORD. Frantz and Spence were architects for the building. Spence Brothers were the contractors.

(*Continued on page 170*)

may we tell you why Amtico RUBBER FLOORING is the modern floor that's right for every style of architecture?



A request on your business letterhead will bring illustrated literature and a box of 4" x 4" samples in standard 1/8" gauge, all 22 stock colors.

NAME_____

ADDRESS_____ STATE_____

CITY_____

Also see SWEET'S FILE, Architectural, Code No. 13e/1

AMERICAN TILE & RUBBER COMPANY
TRENTON 2, N. J.
Specializing in the Manufacture of Rubber Flooring Exclusively for Over 30 Years.

Kno-Draft adjustable air diffusers

for appearance

The simple, unobtrusive design of the Kno-Draft Diffusers blends with either modern or period interiors. In original aluminum, as shown here in the new Maas Brothers Department Store in St. Petersburg, Florida, they create a minor decorative accent. When painted, they merge with the ceiling.

for performance

Air volume and direction adjustments on each Kno-Draft Diffuser provide "custom-made" air patterns to fit the requirements of customers, personnel or industrial processes. These Kno-Draft Diffusers in the American Viscose Plant at Front Royal, Virginia, were adjusted *after installation* to suit the final layout and process in each area of the plant.

FREE HANDBOOK: Send for your copy of our new handbook on air diffusion. Contains complete information on Kno-Draft Adjustable Air Diffusers and all necessary engineering data to help you create "custom-made" air patterns. Just fill in and mail the coupon.

W. B. CONNOR ENGINEERING CORP.

Air Diffusion • Air Purification • Air Recovery

112 East 32nd Street — CONNOR — New York 16, N.Y.

IN CANADA: Douglas Engineering Co., Ltd., 190 Murray Street, Montreal 3, P. Q.

W. B. CONNOR ENGINEERING CORP.

Dept. 560, 112 East 32nd Street, New York 16, New York

Please send my FREE copy of the new Kno-Draft Handbook on Adjustable Diffusers.

Name.....

Position.....

Company.....

Street.....

City..... Zone..... State.....

 (*Continued from page 168*)

L.A. ACHIEVEMENT AWARD

Institution of an annual achievement award has been announced by the Los Angeles Chamber of Commerce Construction Industries Committee.

In a statement announcing establishment of the award, the committee said, "Progress in industry is largely attributable to the selflessness and devotion of a comparatively few of its members . . . (the) Committee, realizing the need for recognizing publicly the achievements which make this progress possible, institutes its Annual Achievement Award, an honor to be bestowed upon a chosen member of the industry at the Annual Construction Industries Banquet."

Candidates for the award may be nominated by members of the construction industries and will be judged upon achievement in public service, in service to the industry, in public relations and in the science of design, construction and materials.

BRITISH EXHIBIT

An exhibition of Britain's contribution to architectural history will take place in 1951 as part of the national Festival of Britain.

The exhibit will be constructed in the center of London and will be in the form of a cross section of a typical residential neighborhood. The section will be revealed as in the process of construction and will comprise not only houses and apartment buildings but also the other features incorporated in a properly balanced development.

Moreover, when the Festival is completed, the buildings will be finished for normal occupation and will take their place in the permanent London scene.

INTERNATIONAL BUILDING CENTER

The International Center for the Building Industry, located at Rotterdam, has been officially opened by the Dutch Minister of Reconstruction and Housing.

Designed to be an international institution for the purpose of supplying information on the art of building and its allied industries, the center is housed in a three-story building. On the ground floor are the technical department, offices, a library, a reading room and a restaurant. The commercial department is on the second floor and the social on the third.

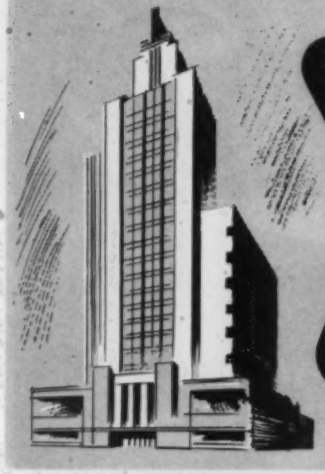
Also on the third floor is a platform for exhibitions, now featuring the reconstruction plans of 20 European towns as well as a special exhibit showing the present city of Rotterdam and the plans for its future.

G. I. HOME LOANS

More than 1,500,000 veterans of World War II have purchased homes with the help of loan guarantys provided in the G.I. Bill, the Veterans Administration has revealed. The figure for June alone was 27,412 applications, which represents more than a 40 per cent increase over the low point reached in the first few months of the year.

The increase follows a steady decline for a year and a half period since the 50,000 rate per month in the fall of 1947. The high point was in September 1946 when almost 58,000 applications were received from lenders.

Remember this dependable source of supply



REYNOLDS *Lifetime* ALUMINUM SHAPES add modern styling to ARCHITECTURAL PLANS

WAREHOUSED IN YOUR AREA FOR PROMPT DELIVERY

● Obtain smart, modern styling with Reynolds *Lifetime* Aluminum Architectural Shapes. Make your selection from the more than 65 standard shapes, created to meet your design requirements.

They're easy to obtain, too! Most of these bright, light, enduring aluminum shapes are warehoused from coast to coast for fast delivery. Whether it is a standard item—such as doors, jambs, thresholds, copings, windows, window sills or decorative trim—or special aluminum shapes designed to your specifications, Reynolds is prepared to quote on your requirements.

For complete data call your nearest Reynolds Office, listed under "Aluminum" in your classified directory, or write direct to the address below.

SEND FOR COMPLETE DETAILS

Engineering drawings of all standard shapes in one compact folder. Can be used for direct tracing. Write to Reynolds Metals Company . . . Aluminum Division, 2572 South Third Street, Louisville 1, Kentucky.

REYNOLDS *Lifetime* ALUMINUM

Consider Aluminum—Consult Reynolds—The Complete Aluminum Service

DESIGN A

Bright *Beginning!*

FOR YOUR CLIENTS' DAYS

Help them start the day right...in a Bright New Bathroom with TILE-TEX WALLS AND FLOORS

Next time you're designing a bathroom, take advantage of the sparkle, color and cleanliness of Tile-Tex* products.

Every Tile-Tex product is engineered with the realization of the importance of color in today's designs.

*Mura-Tex** Wall Tiles, for instance, come in a wide variety of sharp, *true* colors. Warm or cool . . . light or dark . . . primary or pastel . . . solid or marbleized . . . these plastic-asbestos tiles put a veritable rainbow right at your pencil's point.

And . . . color-schemed to go perfectly with Mura-Tex . . . are *Flexachrome** Floor Tiles. You can carry your motif throughout the room, and be sure of color harmony.

Your opportunity for clever individualized patterns is limited only by your own imagination. Because each tile is laid individually . . . and you can even specify custom-designed inserts, like the monogram in the floor above.

Dust and dirt have a hard time sticking to the close-textured, satiny surfaces of these tiles.

Tile-Tex
PLASTIC-ASBESTOS
FLOORS AND WALLS

Cleaning is quick and easy . . . especially important in a bathroom, where moisture and constant high humidity leave water spots and film.

And Tile-Tex walls and floors are as durable as they are beautiful. You need never worry about recommending a sound investment for your clients when you specify Mura-Tex and Flexachrome.

Your local Tile-Tex contractor is a trained specialist in the installation of these modern wall and floor materials. He has complete specifications and product data on every Tile-Tex product. Look in your telephone directory for his name, or write us. We'll rush the information to you immediately. THE TILE-TEX DIVISION, The Flintkote Company, 1237 McKinley St., Chicago Heights, Illinois.

**Registered Trademark, The Flintkote Co.*

NEWS FROM CANADA

by John Caulfield Smith

Housing Costs Show Decline

Construction costs for houses have dropped about four per cent since last fall's peak, according to a recent announcement made by Major-General H. A. Young, vice president of Central Mortgage & Housing Corporation.

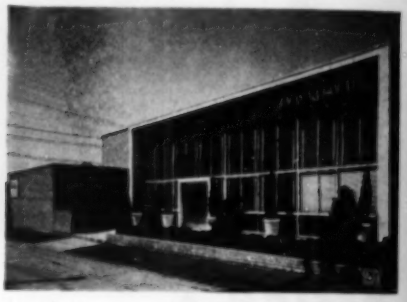
Costs of some building materials are showing signs of falling and contractors in many cases are reducing their profits, he said. Lumber prices have dropped along with prices of all mill work. So have prices of certain insulating materials and wood products. On the other hand, some building materials are holding firm, a few — such as cement — still being in short supply.

The volume of new house production is continuing at a rapid rate, General Young estimated. Evidence of this is seen from the lending operations of Central Mortgage & Housing Corporation under the National Housing Act. During June, 2171 joint loans amounting to $13,326,560 were approved to assist in the construction of 2458 dwelling units. The figures for the same month a year ago were $12,696,280 for 1850 loans on 2408 units.

Average Rent Amazingly Low

Latest candidate for the "believe it or not" department is a revelation that urban tenants pay an average rent for single houses of $40 per month. As a matter of fact, a survey of rents made in 64 Canadian cities by the Dominion Bureau of Statistics puts the average at $30 in most places!

Toronto heads the list with average rentals of from $35 to $59 monthly, and New Glasgow, N. S., is at its foot with average of from $16 to $20.



Graham Warrington Photo

Office building for McGavin Ltd., bakery chain, in Vancouver, B. C. Walls are brick buff plastic. Overhang provides solar control. Architect for the building was Robert R. McKee.

Apartment Building Thrives

More loans were approved for apartment houses in the first three months of 1949 than for any other type of dwelling unit, according to "Housing in Canada," a quarterly report of trends in the shelter field.

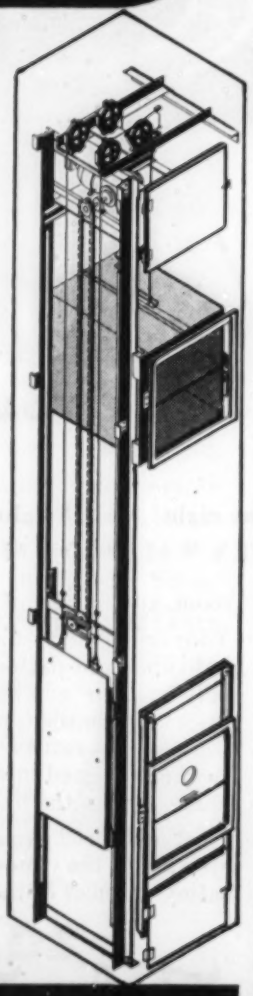
An analysis of National Housing Act operations shows that apartment units represented more than one-third of the total approved gross loans. In the first three months of 1948, similar approvals represented only about eight per cent of the total. This, "Housing in Canada" says, reflects the increased impact of Central Mortgage & Housing Corporation's rental insurance plan on Canada's residential building program.

The plan, introduced last year, guarantees builders of approved rental housing projects sufficient income to look after taxes, debt service, operating ex-

(*Continued on page 174*)

THE *Sedgwick* ROTO-WAITER

...a new kind of fully automatic electric dumb waiter that *never* overtravels



FOR TWO-STOP INSTALLATIONS...the new Sedgwick Roto-Waiter, with its unique endless chain drive principle of operation, embodies those features of safety, dependability and economy that make it the ideal dumb waiter for stores, hospitals, hotels, restaurants, libraries, clubs, schools, banks, factories, residences and other commercial, institutional and industrial buildings.

The single direction motor helps cut costs by eliminating the need for special control equipment normally required when reversing motors are used—and, by reducing starting torque, it cuts current consumption.

Furthermore, Sedgwick Roto-Waiters . . .

1. Never overtravel
2. Are completely factory assembled and tested
3. Require only minimum clearances
4. Have an overload safety device for safe operation
5. Require no heavy load-bearing supports, except at bottom
6. Are easy to install

The table of dimensions, shown below, lists three standard *counterweighted* Roto-Waiters. A Sedgwick *uncounterweighted* Roto-Waiter (with car size 24" x 24" x 36", 150 lbs. capacity) is also available when the dumb waiter is to be installed in limited space, as for undercounter use.

STANDARD ROTO-WAITER DIMENSIONS			
Size No.	2C	3C	5C
Capacity, lbs.	200	300	500
Car width, in.	24"	30"	36"
Car depth, in.	24"	30"	36"
Hoistway width, in.	33"	39"	45"
Hoistway depth, clear in.	27"	33"	39"
Hoistway depth, including doors, in.	29"	35"	41"

In addition to the Sedgwick Roto-Waiter, Sedgwick also builds Multi-Stop Electric Traction Dumb Waiters, designed for installations where there are three or more landings to be served. Both are of all-steel construction. Specify, too, Sedgwick Steel Dumb Waiter Doors for complete satisfaction.

Whatever your vertical transportation problem may be, it is probable that we have case histories on parallel applications in our files. We'll be glad to supply you with such information, prices or any other data you may require.

Sedgwick MACHINE WORKS

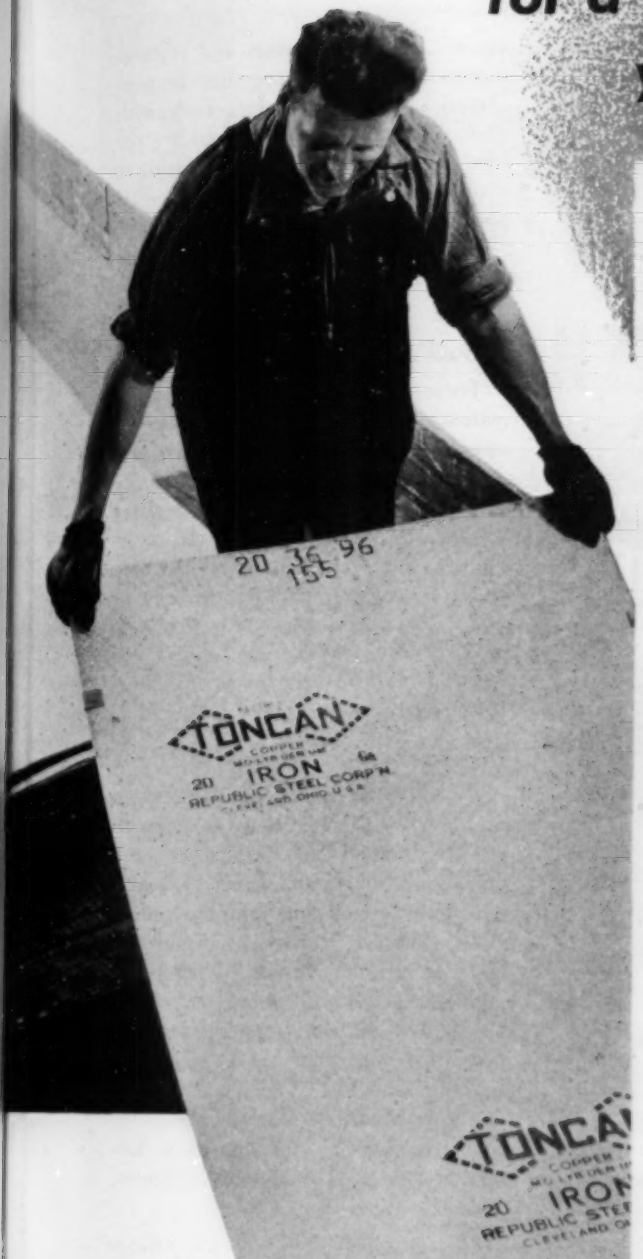
142 West 15th Street, New York 11, N. Y.

ELEVATORS · DUMB WAITERS · RESIDENCE ELEVATORS · STAIR-TRAVELORS

ROTO-WAITERS · SIDEWALK ELEVATORS · FREIGHT ELEVATORS · DUMB WAITER DOORS

BUILDERS OF VERTICAL TRANSPORTATION SINCE 1893

for a little extra money
you get a lot more . . . because



TONCAN IRON RESISTS RUST

-all The way Through

When you figure the total cost of a sheet metal job, it costs very little more to use Truscon Iron than plain or copper-bearing steel . . . but it means more years of satisfaction and *lower cost in the end* to the building owner.

That's because there is no other sheet metal just like Toncan Iron. An alloy of refined open-hearth iron, it contains *twice as much copper* as copper-bearing steel *—plus* molybdenum to bring out the full effectiveness of the copper. As a result, *it provides the highest rust-resistance of any ferrous material in its price class.*

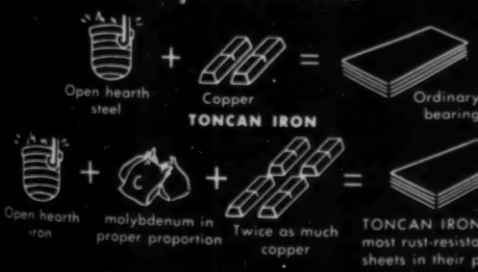
Because it is an iron alloy, Toncan Iron is easy to fabricate by all modern methods. Cold working—cutting, bending, punching, riveting, soldering, welding—does not reduce its rust-resistance. *This rust-resistance is not confined merely to the surface but extends all the way through the metal.*

More than 40 years of service in all types of structures in all industries have conclusively proved the economy of Toncan Iron. Use it to save money for your clients by specifying it for all kinds of sheet metal work. See Sweet's Architectural File or write us for further information.

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

Here's the story

COPPER-BEARING STEEL

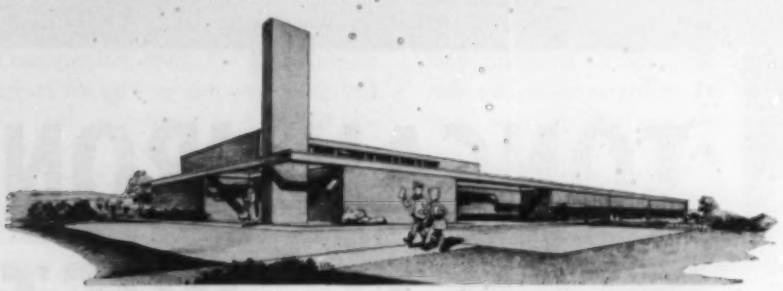


Republic

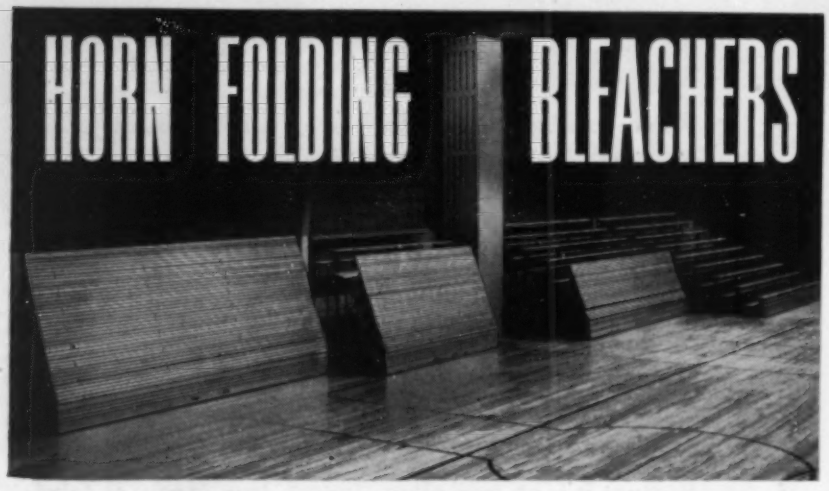
REPUBLIC STEEL

TONCAN COPPER MOLYBDENUM IRON

— for ducts, gutters, conductor pipes, roofing, siding, tanks, ventilators, skylights, hoods and other sheet metal applications requiring rust-resistance — and for corrugated metal drainage products.



School at New Hamburg, Ont., includes auditorium-playroom. By John B. Parkin, Assoc.



Horn Folding Bleachers and Horn Folding Partitions for Greater Space Utilization

	ROWS	FLOOR SPACE IN USE	FLOOR SPACE *CLOSED	**HEIGHT
	3	4 Ft. 9 In.	1 Ft. 8¾ In.	3 Ft. 0 In.
	4	6 Ft. 7 In.	2 Ft. 0⅛ In.	3 Ft. 9 In.
CHECK	5	8 Ft. 5 In.	2 Ft. 3½ In.	4 Ft. 6 In.
YOUR	6	10 Ft. 3 In.	2 Ft. 6⅞ In.	5 Ft. 3 In.
SPACE	7	12 Ft. 1 In.	2 Ft. 10¼ In.	6 Ft. 0 In.
REQUIRE-	8	13 Ft. 11 In.	3 Ft. 1⅝ In.	6 Ft. 9 In.
MENTS	9	15 Ft. 9 In.	3 Ft. 5 In.	7 Ft. 6 In.
	10	17 Ft. 7 In.	3 Ft. 8⅜ In.	8 Ft. 3 In.
	11	19 Ft. 5 In.	3 Ft. 11¾ In.	9 Ft. 0 In.
	12	21 Ft. 3 In.	4 Ft. 3¼ In.	9 Ft. 9 In.
	13	23 Ft. 1 In.	4 Ft. 6½ In.	10 Ft. 6 In.
	14	24 Ft. 11 In.	4 Ft. 9⅞ In.	11 Ft. 3 In.
	15	26 Ft. 9 In.	5 Ft. 1¼ In.	12 Ft. 0 In.
	16	28 Ft. 7 In.	5 Ft. 4⅝ In.	12 Ft. 9 In.
	17	30 Ft. 5 In.	5 Ft. 8 In.	13 Ft. 6 In.
	18	32 Ft. 3 In.	5 Ft. 11⅜ In.	14 Ft. 3 In.
	19	34 Ft. 1 In.	6 Ft. 2¾ In.	15 Ft. 0 In.
	20	35 Ft. 11 In.	6 Ft. 6⅛ In.	15 Ft. 9 In.

*Dimension includes 4½ in. space between top seat and wall.
**Height in open position same as closed. For Bleachers higher than 20 Rows write for complete details and dimensions.

FOR SEATING CAPACITY FIGURE 16" PER PERSON. WRITE FOR COMPLETE DETAILS ON THE "3 IN 1 HORN GYM PLAN". NO OBLIGATION.

HORN BROTHERS CO.
A DIVISION OF HORN INDUSTRIES
FORT DODGE, IOWA — ESTABLISHED 1909

penses, repairs, renewals and replacements. Rental insurance may be purchased for 10, 20 or 30 year periods, with annual premiums of 1¾, 2 and 2¼ per cent of the insured rentals. "Housing in Canada" states that the volume of building under the rental insurance plan rose 25 per cent during the first quarter of 1949 over the corresponding period in 1948.

To Revise Form of Agreement

There's been a feeling that the R.A.I.C. standard form of agreement between client and architect needed, to use garage parlance, a "tune-up, tighten-up." Now it's going to get it. The Committee on Legal Documents, under the chairmanship of R. Schofield Morris, has been instructed to proceed with the revision of the form. Members of the Institute are invited to forward suggestions as to how this can be done most effectively to the Committee.

Construction Off Slightly

With a total value of $102.4 million in June 1949, building contract awards fell $31.5 million short of the mark set in June 1948, and reduced the 1949 gain over 1948 to less than $6 million. MacLean Building Reports, compilers of these figures, do not regard the drop this June as being significant. It is pointed out that two large hydro projects started last June contributed $50 million to that month's record.

All classifications of construction, except engineering, were up on a Dominion-wide basis. Comparative figures, in million dollars are:

Class	*June '49*	*June '48*	*Change*
Resid.	46.9	40.9	+6.0
Business	33.0	31.4	+1.6
Ind'l	9.5	5.8	+3.7
Eng'r'g	12.9	55.7	−42.8

McGill Holds Summer School

Through its School of Architecture, McGill University held a highly successful summer school on zoning from August 29 to September 9 at Macdonald College near Montreal. Professor Harold J. Spence-Sales, well-known Canadian town planner, directed the course. L. M. Orten of the New York State Zoning Commission was one of a number of distinguished lecturers.

Housing Completions Gain

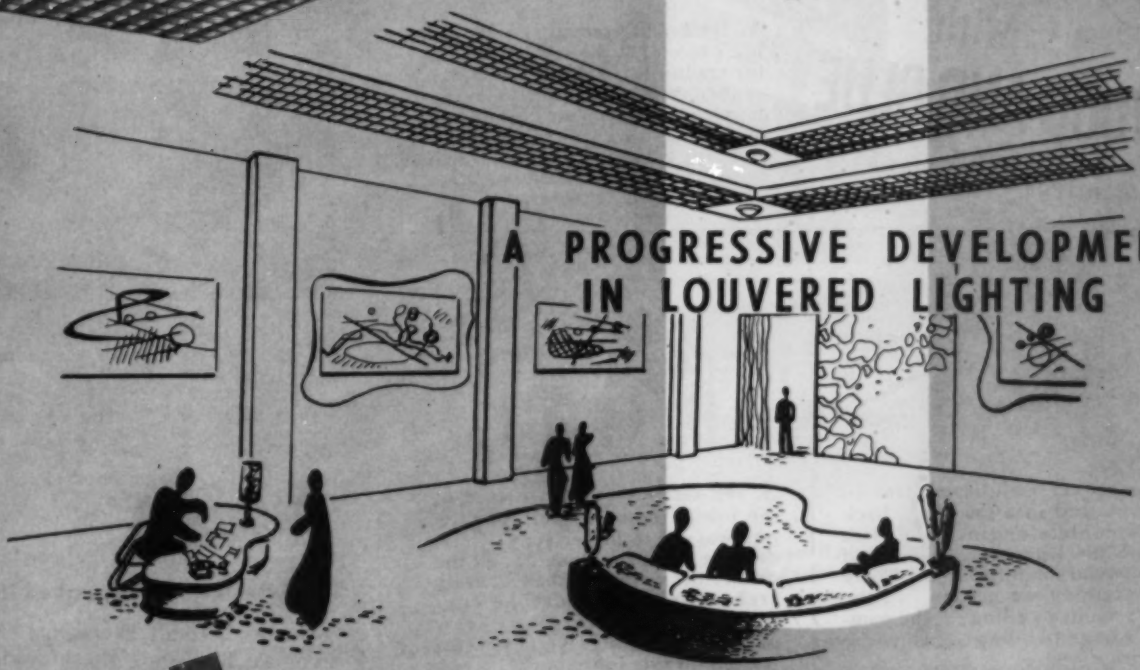
The number of dwelling units completed in Canada during the month of April is estimated by the Dominion Bureau of Statistics at 7251. During the

(*Continued on page 176*)

LOUVERLITE

SLIMLINE

by Smithcraft



A PROGRESSIVE DEVELOPMENT IN LOUVERED LIGHTING

A FOLDER "LOUVERLITE SLIMLINE" IS AVAILABLE UPON REQUEST. WRITE FOR YOUR COPY TODAY!

Smithcraft
LIGHTING DIVISION
CHELSEA 50, MASSACHUSETTS

Louverlite Slimline, truly a progressive development in louvered lighting, utilizes the Smithcraft "area-of-light source" principle to create an extremely shallow and unobtrusive fixture. Designed for two or four T-12 or T-8 96" Slimline lamps, Louverlite Slimline provides an excellent downward component of glare-free light, with an effective louver cut-off of 30° crosswise, 30° lengthwise.

Louverlite Slimline may be mounted surface or pendant, individually or continuous row. Installation and maintenance are effectively simplified. The rigid louver is held by Smithcraft Duo-Cam hangers, and relamping can be easily accomplished by finger-tip release of the louver from a single position. For servicing, the louver hinges from either side and can be removed without involving tools or loose parts.

Louverlite Slimline is a notable achievement in the design of fluorescent lighting elements . . . a proud addition to the Smithcraft line of "America's finest fluorescent fixtures".

UNIVERSITY OF MICHIGAN LIBRARIES

first four months of 1949, 25,077 dwelling units were completed. This was 37 per cent higher than in the first four months of 1948, a result of the high carryover of houses under construction at the end of last year. Construction was begun on an estimated 8466 houses in April, another sign of a higher level of residential building activity for 1949.

About the type of dwellings being built: 29 per cent of those completed during the first four months of 1949 were for rental purposes. In 1948, 33 per cent of those completed during the same period of time were for rental purposes. The average length of time required to build the houses completed in April was 7.9 months, unchanged from the figure reported in March.

Canadians at I.L.O. Meeting

Canada sent a delegation to the recent conference of the Building, Civil Engineering and Public Works Committee of the International Labor Organization in Rome. There were six members: J. Lorne MacDougall of the Department of Labor, representing the Dominion Government, John McLeod, Canadian vice president of the Bricklayers, Masons and Plasterers International Union of America, as adviser, and two representatives of employers and two of workers.

The committee had various questions to consider. They related to the achievement of employment stability, vocational training, the recruiting of apprentices, and industrial relations. Eighteen countries besides Canada were represented. Altogether there were 140 delegates, substitutes and advisers. A working secretariat and staff of interpreters were supplied by the I.L.O. office at Geneva.

We built the church with WOOD AND GLUE

AN ARCHITECT TELLS HOW RILCO HELPED HIM.

1. The building committee wanted a big church . . . the rector held out for traditional beauty and a high, vaulted ceiling . . . the finance committee said, "Keep the cost down". When they threw the problem in our laps we thought right away of wood . . . and, naturally, of Rilco.

2. We sent our preliminary plans to Rilco . . . and in a few days, back came complete engineering data showing how Rilco Glued Laminated Arches would simplify our job. There was everything we needed . . . the rector's vaulted ceiling . . . the committee's large building . . . all at the right price!

3. The Rilco Arches were delivered to the job all ready to put up. Each one was cut to fit perfectly . . . all drilling had been done . . . all the connectors were furnished . . . every arch plainly marked. The contractor's regular carpentry crew couldn't go wrong. No labor cost wasted on this job!

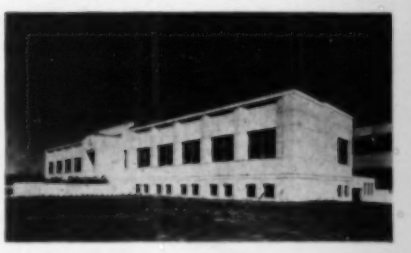
4. Everyone in the congregation says it's the handsomest church in town. And those beautifully grained Rilco Arches are inspiring as you look toward the pulpit. We're certainly glad to find out Rilco makes rafters, trusses, and arches for many other types of buildings, too. We plan to use them more and more. Maybe you should, too.

RILCO

WORKS WONDERS WITH WOOD

Laminated PRODUCTS, INC.

1670 First National Bank Bldg.
ST. PAUL, MINNESOTA



Plant for Turner-Newall (Canada) Ltd., at Montreal covers 10 acres, is devoted to manufacture of asbestos products. Designed by E. C. Miller of T. Pringle & Son Ltd., consulting engineers.

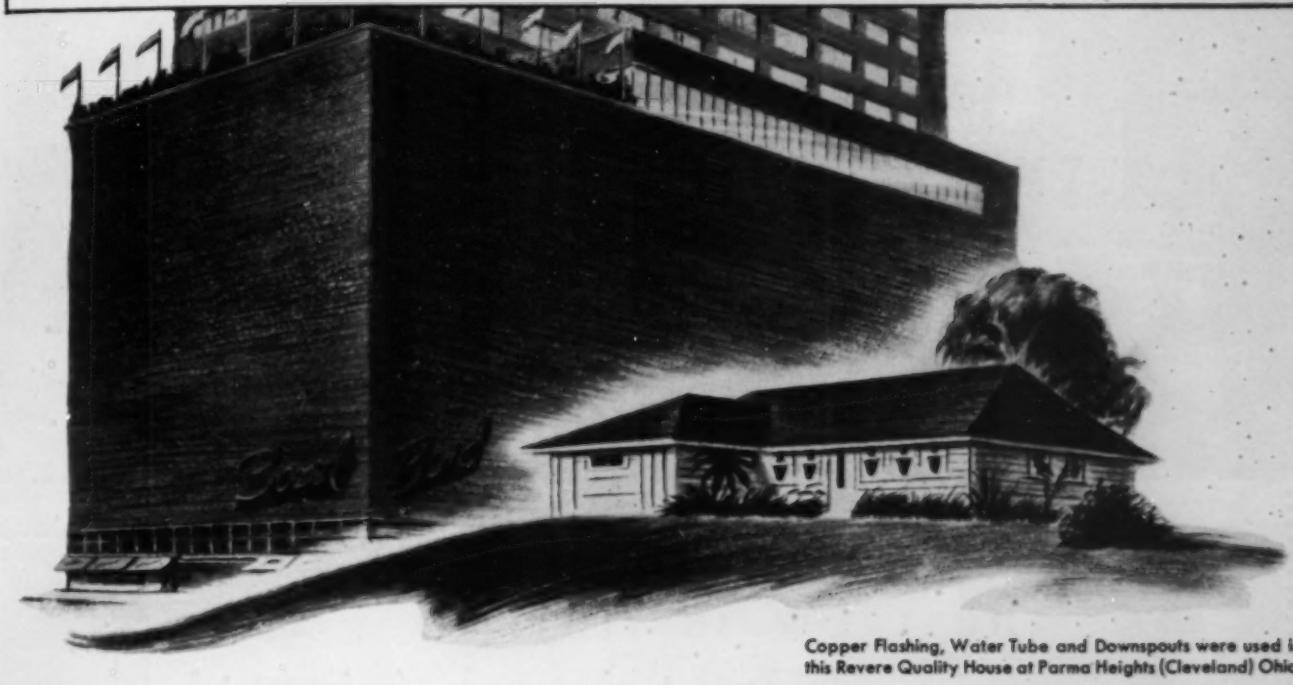
Likes Design "Not Crumbed Up"

Harvey Beecroft, 28-year old Toronto architect, has won a $3000 scholarship offered by Canada's National Industrial Design Committee. The award makes it possible for him to take two years' postgraduate work, leading to a master's degree in industrial design, at Chicago's Institute of Design.

Energetic as well as talented, Mr. Beecroft has a succinct opinion as to what constitutes good design. It's "not jazzy and not all crumbed up." And he knows what to expect when he arrives at his American alma mater. "The first impression is that they're all crazy down there. The things they're working on! But," he explains, "the idea is to get you loosened up, away from old hidebound ideas, so you can develop your own original thinking."

Terrace Plaza Hotel, Cincinnati, Ohio, in which some 135,000 pounds of Revere Copper Water Tube were installed.

IN BUILDINGS LARGE OR SMALL REVERE PRODUCTS INSURE QUALITY



Copper Flashing, Water Tube and Downspouts were used in this Revere Quality House at Parma Heights (Cleveland) Ohio.

TROUBLE always costs more than Revere Copper. That's why—in every type of building—it pays to let *lasting* Revere Copper guard those vital points where water will cause other materials to rust, rot or corrode.

ROOFING, GUTTERS, FLASHING. Copper is the most enduring of all the commonly used sheet metals when exposed to the elements. In addition, the Revere Research Laboratories have developed engineered specifications that help you combine quality and economy in every type of sheet metal construction. This data is in the files of most of the leading architectural offices.

PIPING. Used as piping for heating systems, water supply and waste lines, Revere Copper Water Tube provides a lifetime of trouble-free service. The interiors of this tube do not become clogged by corrosion; and remaining permanently smooth, they reduce frictional resistance to a minimum. In addition, because Revere Copper Water Tube bends readily, and joints are made quickly with solder fittings, this tube is easier to install.

ORNAMENTAL AND STRUCTURAL METALS. You can achieve unusual decorative effects—combined with sound, lasting construction—through the use of Revere panel sheets and extruded shapes. Revere panel sheets are made in architectural bronze, nickel silver and copper; extruded shapes in architectural bronze, nickel silver and aluminum.

The products above and other Revere products of copper, brass and bronze are available from leading distributors throughout the United States. A Revere Technical Advisor will always be glad to consult with you, without obligation.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

• • •

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y.—Sales Offices in Principal Cities; Distributors Everywhere.

(*Continued from page 150*)

automatically sets the nozzle to the most efficient opening for every pressure throughout the range of the pump, and is designed to open the nozzle to just the right point as the pressure increases, avoiding waste recirculation of water.

The Varijet is said to deliver 40–70% more water with less load on the motor for greater dependability and longer life. Flint & Walling Mfg. Co., Inc., Kendallville, Ind.

SMOKE CONTROL

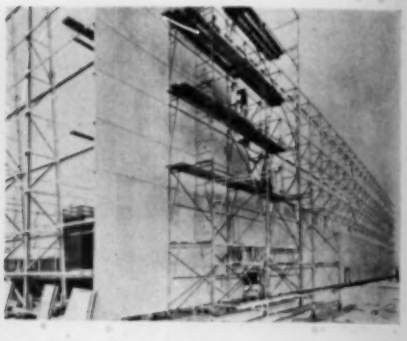
Thorough mixing of air with the combustible gases above the fuel bed is the principle utilized by the *PliOjet* system for eliminating smoke. The system is designed to prevent smoke formation by injecting secondary air into the fire where it is needed and mixing it with the unburned gases.

Jet air streams forced into the firebox when and where needed provide the necessary air and turbulence to mix the volatile gases with the oxygen and obtain complete combustion.

PliOjet is reported to give higher furnace temperatures, cleaner flues and increased combustion efficiency. It is manufactured in ten standard sizes ranging in firing rate from 96 to 3900 lbs. of coal per hr., and from two jets to 16. Plibrico Jointless Firebrick Co., 1800 Kingsbury St., Chicago 14, Ill.

LIGHTWEIGHT ROOF STRUCTURE

Seaporcel porcelain enameled iron pans especially colored and textured to match the terra cotta exterior walls of the building sheath the roof structure of the new General Petroleum building in Los Angeles.



Enameled iron pans sheathing steel roof structure (above) match terra cotta building (below) and achieve reduction of dead load to 1/6–1/7 of terra cotta weight

Use of some 30 tons of sheet steel, covering an area of 25,000 sq. ft., reduced the weight of the roof structure to between 1/6–1/7 that of a similar structure built of terra cotta with necessary steel supports.

Considerable economy in construction cost is also reported from the use of Seaporcel pans, which are said to be indistinguishable from the terra cotta of the rest of the building. Seaporcel Metals, Inc., 28–20 Borden Ave., Long Island City 1, N. Y.

(*Continued on page 180*)

COME ON IN...
the view is fine!

Whose point of view? Everybody's! The architects . . . the store-owner . . . the store's customers. That's the kind of "triple play" many of America's most notable firms expect when they "call for Bergen".

The People's Store of Charleston, W. Va., was no exception. It stands now as the finest store in the South. (We still think the view is swell . . . see the photo above.)

Before we've finished with our say, let's not forget to mention the point of view of another mighty important individual: the comptroller. He likes us because he knows Bergen is easy on budgets.

Well, that tells the whole story. Except to remind you again that if you want to work with the foremost maker of custom store equipment . . . *call for Bergen!*

Write for our Portfolio of "Jobs Well Done". It's worth seeing.

Bergen-sure the success of your modernization program with

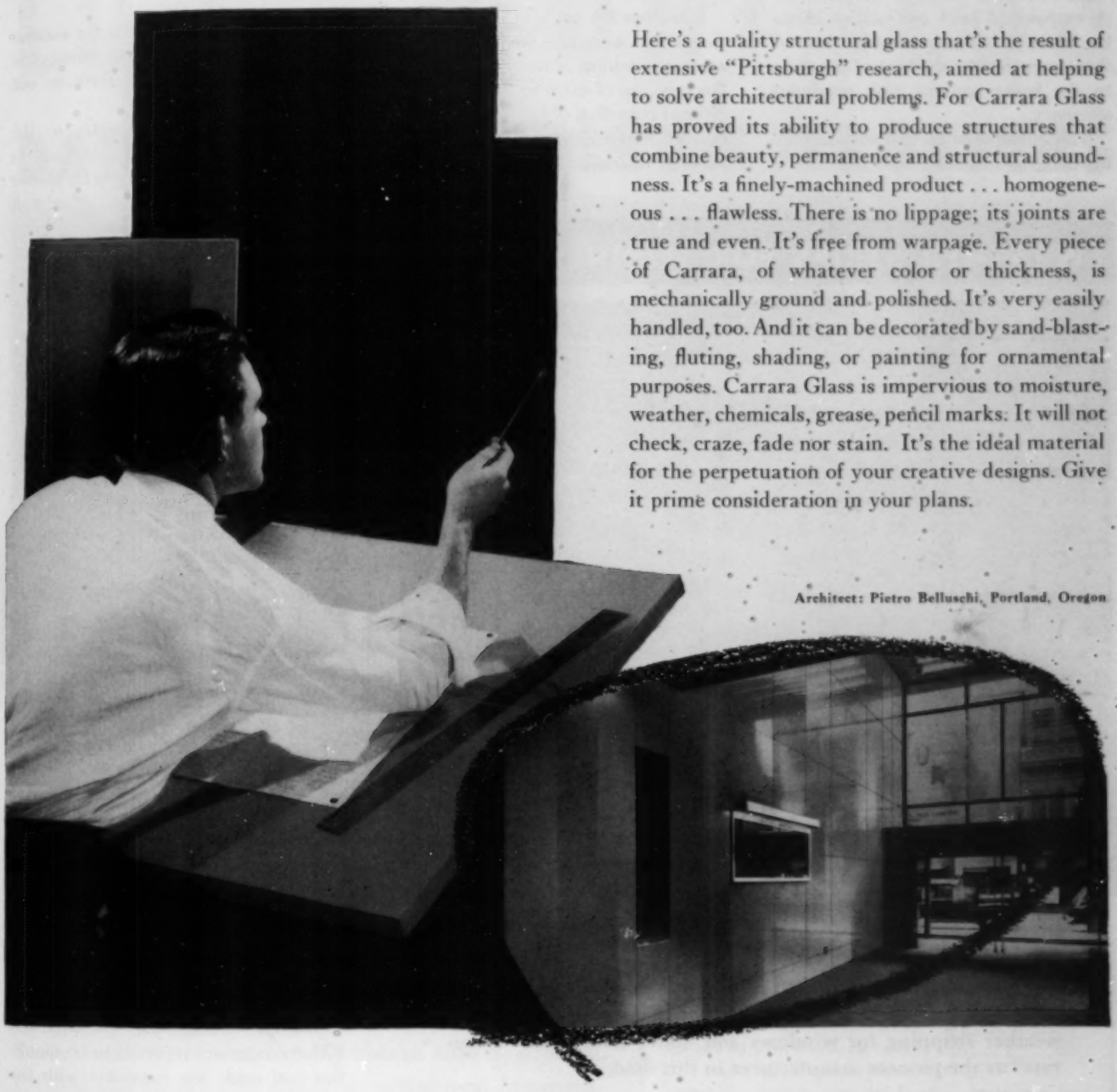
BERGEN CABINET

Architectural woodwork that makes the designer's plan an enduring reality

1552-56 BERGEN STREET, BROOKLYN, N. Y. • Phone: PResident 2-3121

FOR BEAUTY, PERMANENCE AND SOLIDITY

—— *design it with Carrara Glass*



Here's a quality structural glass that's the result of extensive "Pittsburgh" research, aimed at helping to solve architectural problems. For Carrara Glass has proved its ability to produce structures that combine beauty, permanence and structural soundness. It's a finely-machined product . . . homogeneous . . . flawless. There is no lippage; its joints are true and even. It's free from warpage. Every piece of Carrara, of whatever color or thickness, is mechanically ground and polished. It's very easily handled, too. And it can be decorated by sand-blasting, fluting, shading, or painting for ornamental purposes. Carrara Glass is impervious to moisture, weather, chemicals, grease, pencil marks. It will not check, craze, fade nor stain. It's the ideal material for the perpetuation of your creative designs. Give it prime consideration in your plans.

Architect: Pietro Belluschi, Portland, Oregon

Carrara *the quality structural glass*

PPG

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

(*Continued from page 178*)

BOILER-BURNER UNIT

A boiler-burner unit for residential hot water and steam heating systems, the *Smith-Mills "100"* oil unit, features an empowered brick combustion chamber which is said to generate a clean oil flame and transfer the heat of the flame to the boiler sections with maximum efficiency.

This chamber is backed with insulating material furnished with the unit, so that while temperatures in the heart of the chamber may reach 2000 degrees F., the outside foundation walls remain cool to the touch.

A bottom fire brick plate is designed to act as a template and assure rapid, accurate assembly of the chamber. Boiler flue passages of extra length permit additional reduction of temperature of the flue gases until they finally reach the chimney with most of the heat extracted.

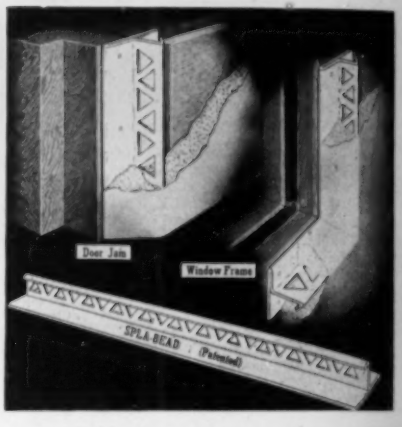
The unit, available with either flush or extended type jacket, comes with either a tank or tankless hot water heater completely enclosed in the rear section of the boiler. The H. B. Smith Co., Inc., Westfield, Mass.

STEEL MOLDING

A flexible steel substitute for wooden molding around doors and windows is reported by the manufacturer to cut labor costs by 75 per cent.

Spla-Bead is nailed directly to the woodbuck and jam and is designed to provide a secure bond and key for plaster around doors, windows, or other wall openings.

Steel molding nailed to door jam and window frame forms bond and key for plaster



With Spla-Bead, the work of countersinking nails and puttying, sanding and lathing around doors and windows, mortising corners, and making joints for base molding all are eliminated. Spla-Bead can be run clear to the floor and can be cut and bent for corners.

Galvanized steel, 28-gauge, is used to make the new molding. Plasterbead Corp., 333 E. 2nd St., Los Angeles 12, Calif.

ANTENNA SYSTEM FOR APARTMENT TELEVISION

Multiple installations of television and FM receivers are reported to be simplified and made less expensive with the *Multicoupler*, a new antenna system for apartment house roofs.

As many as 24 television receivers from one antenna should be possible with the Multicoupler, according to the manufacturer, who points out that his product will eliminate the need for many unsightly antenna arrays, at the same time making possible many multiple installations which were previously prohibited by the high cost of earlier systems.

(*Continued on page 182*)

WEATHER STRIPS FOR SLIDING DOORS

Everyone Wants Sliding Doors!

"ACCURATE" ASSURES OPERATING EFFICIENCY

Everywhere, more architects are specifying sliding doors to open on terraces, patios, balconies, porches. An unexcelled feature for clubhouses, finer residences, sanitaria and similar buildings. "Accurate" has played a major role in promoting the use of exterior sliding doors by assuring more efficient, smoother gliding operation, *plus wholly weatherproof qualities,* backed by numerous patents. 43 years' experience in making better metal weather stripping for windows and doors establishes "Accurate" as the pioneer manufacturer in this field.

WRITE FOR SPECIAL FOLDER

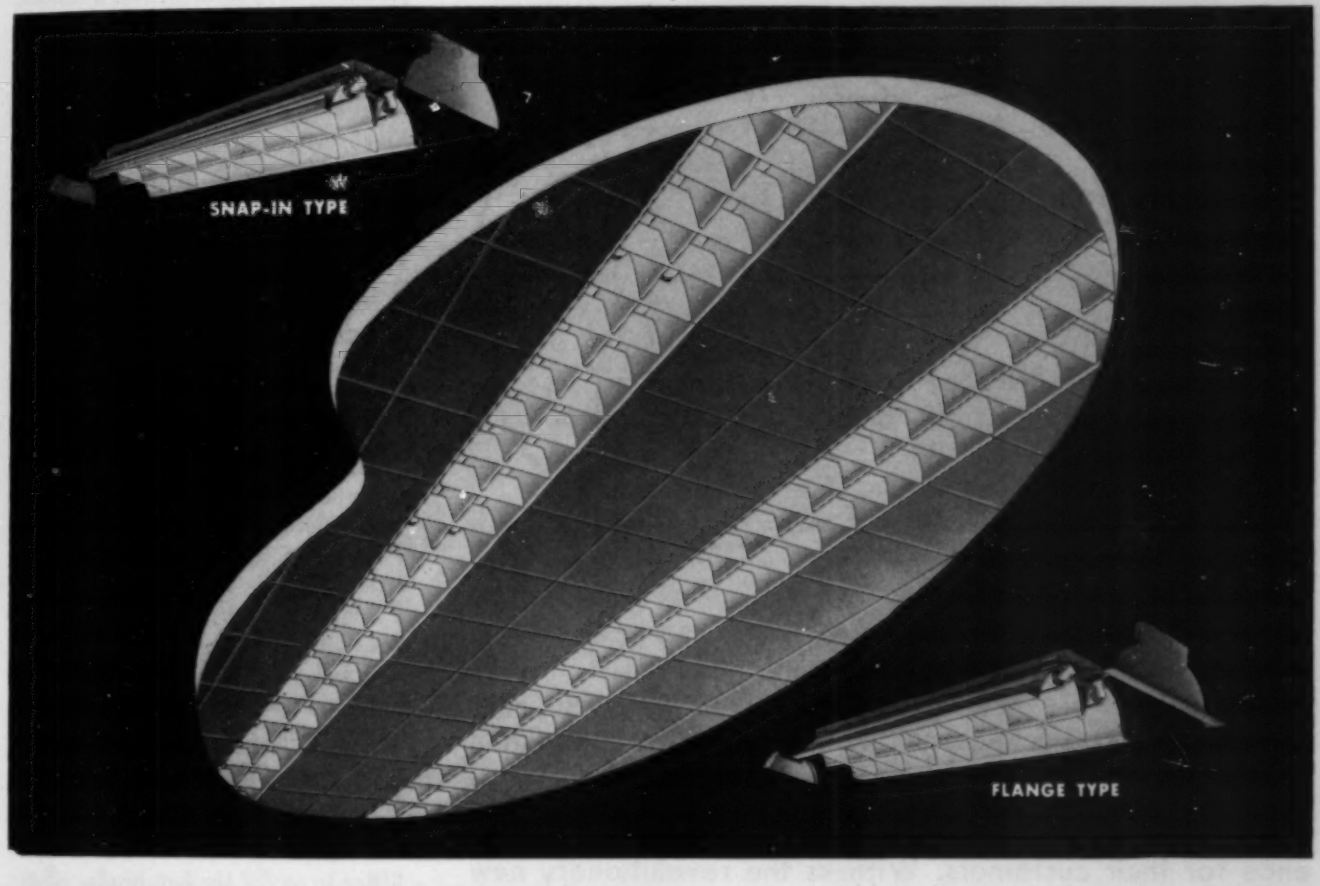
TRADE MARK ACCURATE REG. U.S. PAT. OFF.

ACCURATE METAL WEATHER STRIP CO., Inc.
215 EAST 26th STREET, NEW YORK 10, N. Y.

DE LUXE LIGHTING FROM AN INCONSPICUOUS SOURCE...

LOW BRIGHTNESS

DAY-BRITE ALUMINUM TROFFERS



FUNCTIONAL...AND HARMONIOUS!

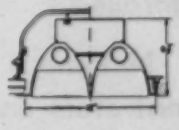
Day-Brite diffuse Alzak aluminum troffers provide extremely low contrast between light source and surrounding ceiling. That means smooth, *unobtrusive* lighting without blare or glare . ... a fixture that lends subtle beauty to architectural treatments.

And!... the parabolic design provides *accurate control* of light distribution. Light weight, durable, easy to install and maintain ... these Day-Brite aluminum troffers are setting the pace where premium lighting at economical cost is called for.

Right now ... TODAY... write for descriptive Bulletin 20-B. Address Day-Brite Lighting, Inc., 5465 Bulwer Ave., St. Louis 7, Missouri. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

DISTRIBUTED NATIONALLY BY LEADING ELECTRICAL WHOLESALERS

DAY-BRITE ALUMINUM RECESSED TROFFERS



For two 40-watt fluorescent lamps ... single unit or continuous installations. Snap-in type for Tee-Bar construction and flange type for acoustical or plaster ceilings. Wired with certified ballasts (ETL approved), sockets, and NO-BLINK type starters. Knockouts provided for feed connections. Louver assembly is supported by spring tension clips for easy removal and replacement without tools.

IT'S EASY TO SEE WHEN IT'S

DAY-BRITE *Lighting*

339

(*Continued from page 180*)

Containing only eight tubes, each unit will serve up to eight television sets, and as many as three units may be used in cascade to permit the simultaneous operation of 24 television receivers from one antenna.

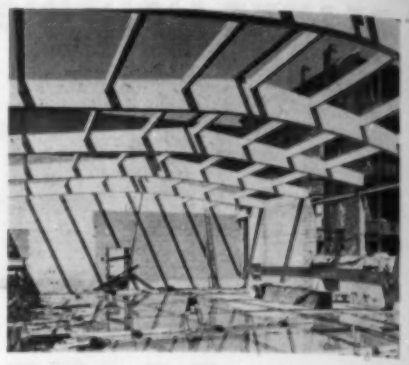
Units can be installed in a central location or placed adjacent to each group of from 8 to 24 apartments. Television Equipment Corp., 238 William St., New York 7, N. Y.

LAMINATED BEAMS

Glued, laminated beams with a camber of 2 ft. were used in the construction of St. Joseph's School in Chicago.

Six beams 53 ft. long and 3 ft. high at the center line were used. The lamination totaled 24 plies of 2-in. stock held together entirely by glue, without nails, bolts or rings.

After the beams are glued, they are planed down ¼ in. to produce a smooth, glass-like finish that accentuates the grain of the wood. They are then treated with a liquid preservative for protection against termites, fungus, dry rot, etc. Finally, stain, wax or varnish is applied.



Glued beams for roof structure of school

The glued beams obviate the necessity for bowstring trusses and a finished ceiling, the beams being left exposed. American Roof Truss Co., 6844 Stony Island Ave., Chicago 49, Ill.

CARS STACKED FOR PARKING

Steel-fabricated storage racks with space for cars four deep are combined with a hydraulically-operated mobile elevator to provide a new solution for the problem of metropolitan parking.

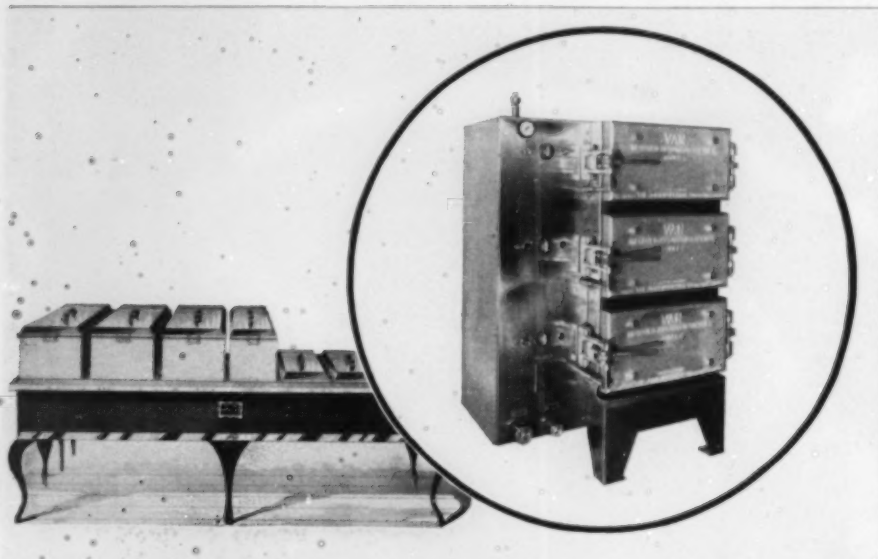
Installation costs of *Pigeon Hole Parking* are estimated to be one-tenth or less than the cost per car of building a ramp-type garage, and maintenance costs are also expected to be considerably less.

A small car lift within the mobile elevator slides out beneath the car to be parked, lifts it a few inches off the ground and carries it into the main elevator. The mobile elevator then moves sideways along standard railroad track, lifting to any of the four levels.

When the desired stall is reached, the car lift carries the car into the stall and sets it down. Average time for this complete operation is reported as 30 seconds.

(*Continued on page 184*)

Cars are stacked four deep in steel racks



the pattern of Van progress

● A glance at these two steamers tells a quick story how Van has led the kitchen equipment industry for more than a hundred years. As new arts and metals have developed Van has incorporated them into instruments of convenience for their customers. Witness the revolutionary new automatic Van steamer . . . each compartment individually controlled.

● Nationally Van has won the respect of hospital administrators and their architects. When you have a food service problem a Van kitchen engineer is ready to assist you and your architect.

The John Van Range Co.

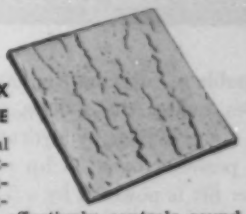
EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

DIVISION OF THE EDWARDS MANUFACTURING CO.

Branches in Principal Cities

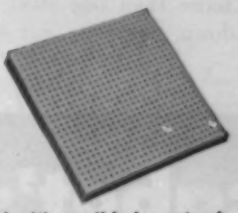
429 CULVERT STREET CINCINNATI 2, OHIO

Tested and proved acoustical materials to meet every building code, specification and sound conditioning requirement —installed with the skill that reflects 25 years of experience and hundreds of thousands of successful installations!



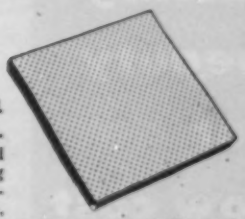
ACOUSTI-CELOTEX FISSURETONE

is a totally new mineral fibre acoustical tile. Attractively styled to simulate travertine, it beautifies any interior and effectively controls sound reverberation. Light weight, rigid and incombustible, it is factory-finished in a soft, flat white of high light-reflection rating. The handsome fissured surface can be cleaned and painted with brush or spray.



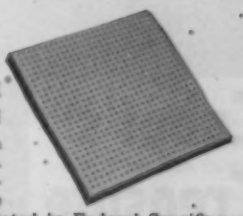
ACOUSTI-CELOTEX MINERAL TILE

is made of mineral fibre, felted with a binder to form a rigid tile with a universal rating of incombustibility. Perforated with small holes extending almost to the back of the tile, high acoustical absorption is provided together with unrestricted paintability by either brush or spray method.



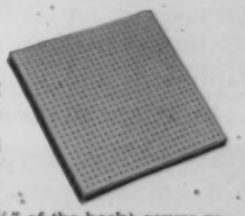
ACOUSTEEL

combines a face of perforated steel with a rigid pad of sound absorbing Rock Wool to provide excellent sound absorption, together with attractive appearance, durability and incombustibility. The exposed surface of perforated steel is finished in baked-on enamel. Acousteel is paintable, washable, cleanable.



ACOUSTI-CELOTEX FLAME RETARDANT TILE

is a cane fibre tile with a flame retardant surface. This tile meets all requirements for *Slow Burning* rating as stipulated in Federal Specifications SS-A-118a. It may be washed or repainted without impairing its flame retardant characteristics—and without loss of sound absorbing capacity. Supplied in all sizes and thicknesses of regular cane tile.



ACOUSTI-CELOTEX CANE FIBRE TILE

is a light weight, rigid unit, combining acoustical efficiency with a durable, smooth surface. Perforations (to within 1/8" of the back) assure repeated paintability and ease of maintenance. Available in a variety of sound-absorbent ratings. Rot proof and vermin proof (patented Ferox process).

ACOUSTI-CELOTEX

TRADE MARKS REGISTERED U. S. PAT. OFF.

Sound Conditioning Products

PRODUCTS FOR EVERY SOUND CONDITIONING PROBLEM

120 S. La Salle St., Chicago 3, Illinois • Sound Equipments, Ltd., Montreal, Quebec, Canada

(*Continued from page 182*)

Capable of carrying the longest automobiles made, the mobile elevator is 19 ft. long, driven by hydraulic equipment powered by a 30 hp motor. The smaller lift is powered by a 3 hp motor; and runs on fiber wheels to make the operation almost noiseless.

Automatic catches are said to make it impossible for the mobile elevator to drop more than one level in case of breakdown, and the car is securely blocked while in the storage rack. The unit is said to be equipped with all the latest locks, blocks, and safety devices to protect the cars it stores.

Car owners benefit from a parking system which never requires the operator to enter the car, so that valuables can be securely locked inside, and which eliminates possibility of damage to the car from "careless driving" by attendants. Cars are easily accessible at all times, since no other cars need be moved to clear the way.

Designed for a rectangular-shaped lot, the unit offers storage racks built in sections of two or more, each sub-section holding four cars. Storage racks are also available almost double in length for putting two cars in each stall. The Peters Company, Portland, Ore.

cabot's stains
lasting beauty for low cost homes!

Architect: Jerome B. Foster, Winchester, Mass.

Cabot's Creosote Stains

cost only 1/3 as much as good paint . . . produce a striking and practical finish for wood siding, clapboards and shingles. Cabot's Stains penetrate deeply . . . bring out all the natural beauty of the grain and texture.

Available in a wide range of colors, from brilliant hues to weathering grays and browns.

Cabot's Stains are made with a high proportion (60% to 90%) of creosote oil which gives years of protection against decay and termites. Cabot's Stains go on easily . . . won't blister or peel, even on unseasoned lumber!

WRITE TODAY *for color card and complete information.*

Samuel Cabot, Inc.
922 Oliver Building, Boston 9, Mass.
New York *Minneapolis* *Chicago*

COTTON ACOUSTICAL TILE

Sound control through application of a new acoustical principle which creates interiors that are "alive" is the achievement reported for a cotton-base acoustical tile now on the market.

The tiles, made in units 12 in. sq., each weighing only 3 oz., are said to preserve the life, tone and naturalness of voices and music instead of merely deadening sound.

In effect, according to the National Cotton Council, the cotton tile filters out harshness, reverberations and echoes, leaving the vocal and musical tones at their best.

Cotton acoustical tile in radio studio

Diaphragmatic action of the tile's surface, like the action of the diaphragm of a loud speaker, is said to provide acoustical correction.

A special adhesive designed to keep the tile permanently in place is applied to the lips of the tile either by hand or with a caulking gun.

Maintenance cost is said to be low. The tile may be cleaned with a vacuum cleaner and may eventually be painted with a non-oil paint without impairment of its acoustical qualities. The National Cotton Council, P. O. Box 18, Memphis, Tenn.

ASBESTOS BUILDING BOARD

Integrally colored asbestos-cement sheets for interior use, described as ideal for kitchens and bathrooms, is highly resistant to fire and immune to moisture.

(*Continued on page 186*)

WHEN YOU'RE FIGURING CABLE COSTS* USE THESE FACTS ON FILE ABOUT OKONITE

4700 feet of Okonite Underground Cable in service since 1908..... Removed and Re-Used in 1948

2000 feet of Okovar Varnished Cambric Cable Installed Overhead and put in service in 1927..... Removed and Re-Used in 1948.

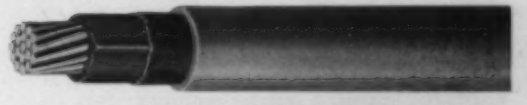
In the files of The Okonite Company are a number of case histories that tell their own story of the long life—the real yardstick of cable economy—that you can count on with Okonite. The two instances cited above are from the records of a single customer.

They are two of eleven instances of cables long used and transferred to new locations by this customer, who has re-installed more than 24 miles of such Okonite cable.

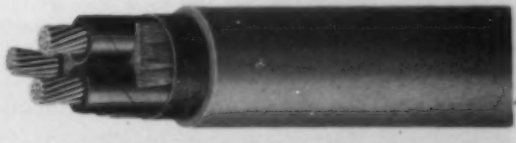
Building true value into cable has been Okonite's business since 1878. What goes into an Okonite cable to make it do a better job...what tests it must pass...what care is taken to control its electrical characteristics—all this and other data are found in Research Bulletin AR-101. For a copy, address The Okonite Company, Passaic, New Jersey.

***with today's installation costs only the *Longest-Lived* will be economical.....**

The lifetime cost of a cable rather than its first cost is the only true measure. Okonite wires and cables, built to stand up better and longer, can offset high installation costs.



Okonite rubber insulated lead-covered underground cable.



Okovar varnished cambric lead-covered aerial power cable.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE SINCE 1878 *insulated wires and cables*

7421

(*Continued from page 184*)

Decorative Flexboard, which has a mottled appearance with a soft gloss finish, is available with either a smooth or a tile scored surface in gray, green, buff or rose.

Applied by nailing or cementing, the sheets can be worked with ordinary carpenter tools.

Plain sheets are 4 by 8 ft. and ⅛ in. thick; scored sheets with a 4-in. square pattern are 4 by 4 ft. and ⅛ in. thick. Johns-Manville, 22 E. 40th St., New York 16, N. Y.

ACCORDION INSULATION IN NEW WIDTH

Infra accordion-type, aluminum reflective insulation is now being made in a 12-in. width in addition to the 16- and 24-in. sizes.

Thick, tough aluminum sheets with a bursting strength of 17 lb. per sq. in. are used for Infra Insulation. This aluminum foil used by Infra is reported to have zero permeability to any gas, whether water-vapor, cold air or warm air.

According to laboratory tests reported by the manufacturer, Infra is equivalent to: more than 6 in. of rockwool for down heat flow, 4 in. of rockwool for up heat flow, and 3⅓ in. of rockwool for lateral heat flow. Infra Insulation, Inc., 10 Murray St., New York, N. Y.

WEATHERSTRIP RAIL

An improved, friction-type, double-hung window for low cost housing is said to be possible with *Seal-Rite*, a one-piece, channelled, metal weatherstrip rail which is made to be cut to length to fit any window casing.

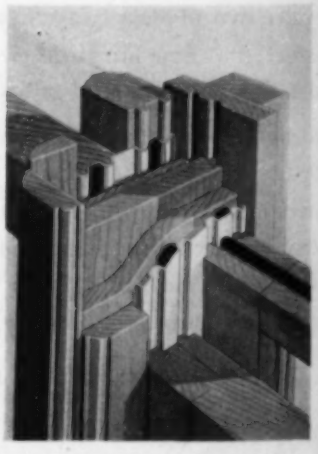
Both the top and the bottom sash slide in the pre-formed channels of this vertical compression rail, which serves both sashes, with the parting stop integral with the vertical rail itself.

Two continuous rubber strips, placed on the back of the vertical rail opposite the stiles of the sash to function as springs, provide pressure for holding the sash in the desired position at all times.

Installation of the channel rails in both sides of the window is planned to insure even pressure against both sides of the sash at all times.

Ease of installation, draft prevention, resistance to dust and noises are all listed as features of the Seal-Rite construction. Seal-Rite Mfg. Co., 600 Michigan Bldg., Detroit 26, Mich.

Rubber strips insure even pressure on sash



WATER SOFTENER

Softenal, a new water softener and conditioner, is reported to soften the hardest of water and simultaneously re-

(*Continued on page 188*)

NO VISIBLE WEAR

AFTER *30* YEARS OF CONSTANT USE!

Stairs get a lot of punishment in 30 years under the thousands of busy feet which go up and down them—year in, year out. Yet this unretouched photograph (just taken) of the "Feralun" stair treads, installed 30 years ago in the plant of the Dennison Manufacturing Co. at Framingham, Massachusetts, shows no evidence of more than a quarter-century's "foot traffic." 30 years of resistance to wear! 30 years of non-slip underfoot safety! Good for many years to come!

Examples like this show why architects, engineers and builders insist on "Feralun"* treads, nosings and plates. Made of cast iron with wear-resistant abrasive particles embedded in walking surfaces, "Feralun" provides a sure-footed "grip" that keeps feet from slipping—and wears and wears. The coupon below will bring you full information on "Feralun." Send it today.

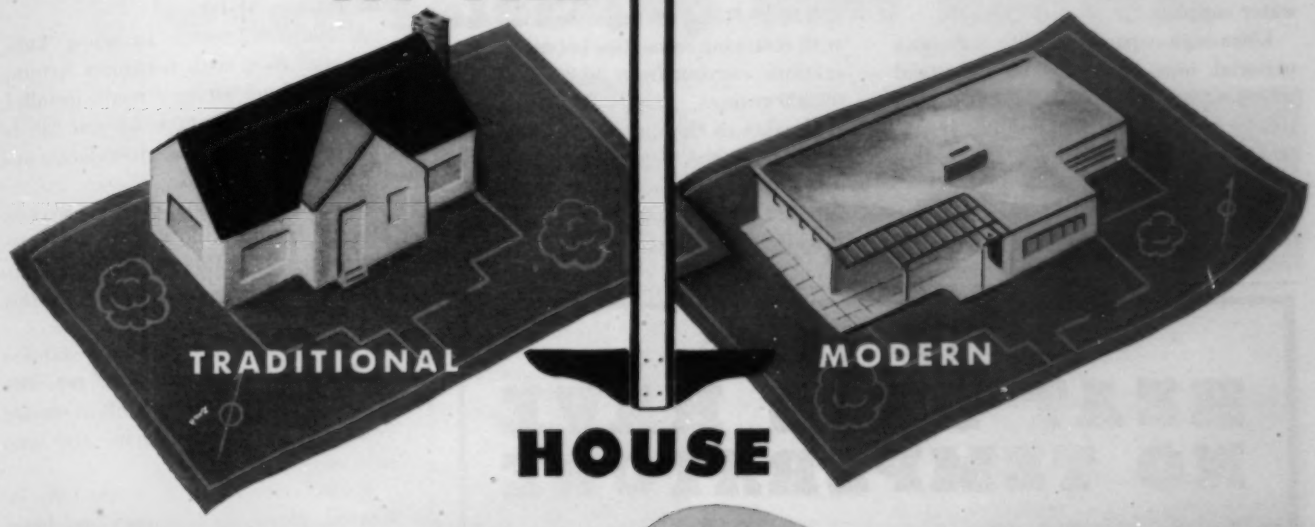
**Also available in Bronze*—(Bronzalun), *Aluminum*—(Alumalun), *and Nickel Bronze*—(Nicalun). ®

AMERICAN ABRASIVE METALS CO.
IRVINGTON 11, N. J.

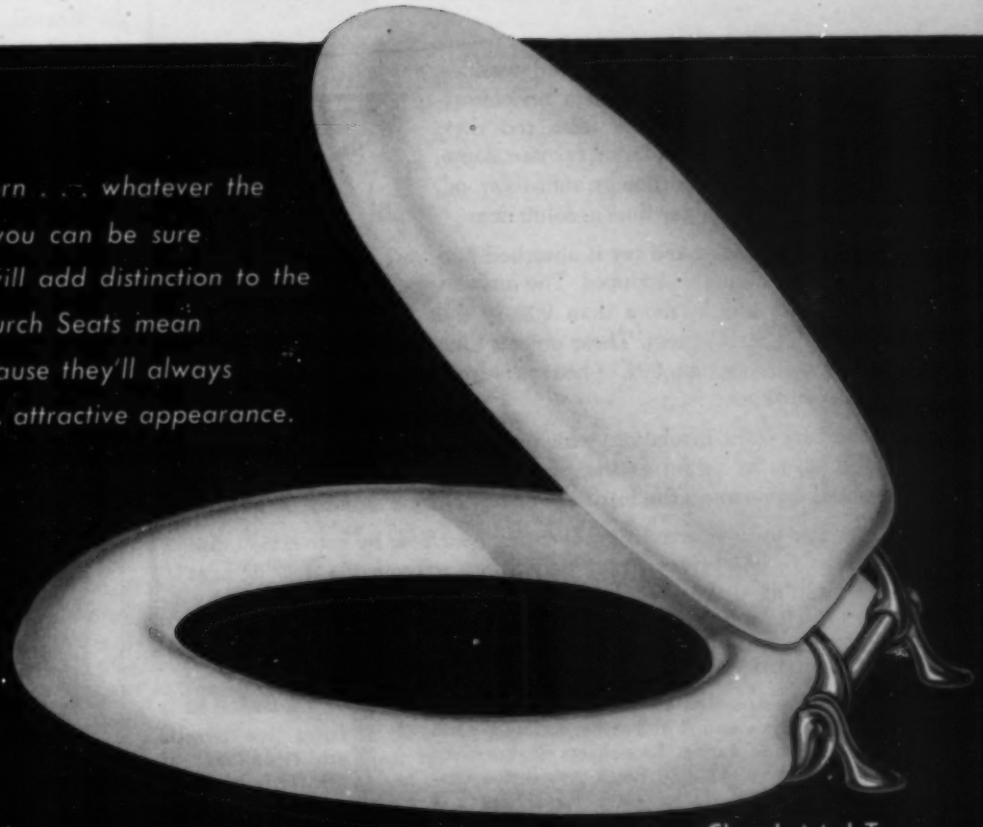
AMERICAN ABRASIVE METALS CO.
470 COIT STREET
IRVINGTON 11, N. J.

(AR 9-49)
Gentlemen: Please send me full information on Feralun.
NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... STATE .....

THE BEST SEAT IN THE HOUSE



Traditional or Modern . . . whatever the architectural style, you can be sure that Church Seats will add distinction to the bathroom. And Church Seats mean satisfied clients, because they'll always keep their gleaming, attractive appearance. The first cost is the last cost.



Church Mol-Tex
No. 900

Church Seats

C. F. CHURCH MFG. CO. HOLYOKE, MASS.
Division of American Radiator & Standard Sanitary Corporation

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

(Continued from page 186)

move iron, manganese, light sediment and other impurities found in ordinary water supplies.

Ultra-high-capacity zeolite softening material, once used only for industrial softening applications, is furnished with this softener, which can be regenerated by a single-lever master control valve.

Enough salt for at least six regenerations is contained in the salt brine tank, and the zeolite is said to be permanent, lasting as long as the installation.

The Softenal is made in four sizes, with softening capacities between regenerations varying from 30,000 grains to 90,000 grains.

Heights of the units vary from 52 to 55 in., and the largest of the units requires a floor space of 22 by 38 in., the smallest, 16 by 26 in. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.

DON'T FORGET THAT

HEAT RAYS HAVE NO TEMPERATURE

Most heat that warms dwellings and working spaces in winter, and makes them uncomfortable in summer, comes from infra red rays; invisible radiations from radiator, furnace, flame, electric device, sun, human beings, animals, wood, plaster... anything warmer than absolute zero.

Only when that infra red ray is absorbed into a surface is heat actually produced. The surfaces of most objects absorb more than 90% of the heat rays which strike them. These objects then emit or radiate more than 90% of heat rays from their other surfaces.

That is why Infra Insulation, which absorbs and emits ONLY 3% of radiant heat, is so useful as insulation, confining winter heat where it is wanted, preventing the intrusion of unwelcome summer heat rays.

Infra is also most effective in preventing heat flow by convection and conduction. These however, play only minor roles in the flow of heat through building spaces.

Permanent in Insulation Values

Infra's multiple separated aluminum sheets provide 4 reflective spaces and 4 reflective surfaces, each non-condensation-forming. Two sheets of aluminum and the accordion partition block convection currents. Infra's triangular reflective air spaces and small mass eliminate conduction as a problem.

INFRA C FACTORS AND ROCKWOOL EQUIVALENTS

C.052 Heat Flow Down, equals 6" Rockwool.
C.093 Heat Flow Up, equals 3½" Rockwool.
C.10 Lateral Heat, equals 3 1/3" Rockwool.

WRITE

Infra for details and FREE COPY of "Bulletin No. 38," issued by the National Housing Agency of the Government, reporting tests of Aluminum Insulation made by the U. S. Bureau of Standards, and dealing principally with the problems of heat transfer and condensation.

Address Dept. AR

MULTIPLE ACCORDION ALUMINUM & TRIANGULAR REFLECTIVE AIR CELLS

Infra INSULATION, INC.
10 Murray St., N. Y., N. Y.

PACKAGED BATHROOM

Ad-a-Bath, a fully-equipped packaged bathroom, can be added as an extra room to any house which has electricity and running water.

A complete room, including walls, floor and roof, with bathroom fixtures, plumbing and wiring already installed, Ad-a-Bath is factory built and can be placed on a permanent foundation and attached to the existing house.

Four simple utility connections take care of plumbing and wiring, and a special system of joining connects the entire room to a house of any type, whether frame, brick, stucco or veneer.

Fittings include bathtub of stainless steel finished with stain proof porcelain enamel, lavatory, stool, built-in electric heater and built-in medicine and linen cabinets.

Walls, ceiling and floor are fully insulated, plumbing is copper and brass, and accessories are chrome-plated. Towel bar, soap dish, tub grab bar and a toothbrush and tumbler holder are all factory-installed.

Savings of 30 to 40 per cent compared with a bathroom built in the conventional manner are effected because on-the-site labor can be finished in less than a day, the manufacturer reports. Builders Manufacturing Co., Bremen, Ind.

Prefab bathrooms come fully equipped

ELECTRIC AIR FILTER

An electric air filter especially designed for use with packaged 3- and 5-ton air conditioners, *Model 904 Trion*, was recently shown for the first time at the Store Modernization Show in New York.

The Trion is said to handle air volumes up to 2000 cfm at 90 per cent efficiency, removing dust, dirt, soot, smoke, pollen and air-borne bacteria.

Described as suitable for commercial and other installations where space is at

(Continued on page 190)

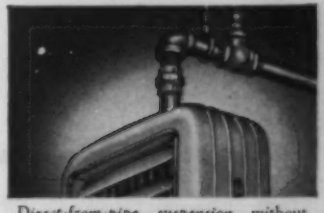
LOOK BEYOND BTUs

when selecting Unit Heaters

* For maximum comfort and lowest operating cost, temperature of air leaving unit heater should be between 110°-120° F. at standard conditions.

Modine quieter operation is a result of scientifically sound-silencing air rush noises. Motor vibrations are effectively absorbed and dissipated by rubber mountings and resilient motor suspension.

Control of heat distribution on vertical models is provided by a built-in adjustable radial deflector assembly, furnished at no extra cost. You can beam, flood or gently diffuse heat as required.



Direct-from-pipe suspension without other supports is safe and practical with Modine Horizontal models. This cuts installation costs and permits easy redirection of heat over a 360° range.

Here's what you get with Modines!

• LOWER OPERATING COSTS

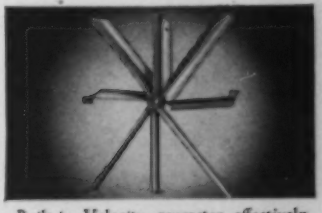
Modine Unit Heaters deliver heat down into comfort zones where heat is needed instead of wasting it on ceilings or above the heads of room occupants. *This means lower fuel costs!* Only unit heaters with sufficient air velocity and correctly related outlet temperatures can give you this performance.

High quality split-phase or capacitor motors (instead of less expensive shaded-pole motors) are used on all but the smallest Modine Unit Heaters. *This means lower power and motor maintenance costs!*

• UNIFORM HEATING COMFORT

Overheated outlet air is buoyant and rises quickly. Underheated air feels "chilly." Similarly, excessive air velocity causes drafts, while air delivered with insufficient velocity fails to reach the floor.

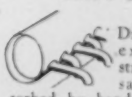
Because Modine outlet temperatures and velocities are *right*, and correctly related to each other, hot blasts and cold drafts are avoided. Floors are kept comfortably warm. Heating is uniform in all parts of the room even in coldest weather.



Built-in Velocity generator effectively increases heat throw without increasing power requirements. Outlet air retains a large share of its initial velocity to penetrate cold air strata near floor.

WHY MODINES LAST LONGER

Entire condenser is pure copper and copper alloy . . . for maximum resistance to electrolysis and corrosion. Tubes are red brass; fins and headers, copper.



Differential expansion stresses are safely absorbed by bends in individual tubes and are not transmitted to tube-header joints to cause condenser fracture.

Fins are permanently bonded to tubes with metal. All condenser joints are brazed. There are no screwed or expanded joints to weaken condenser structure.

Parker-Bonderizing protects castings and sheet metal parts against formation and spread of rust. Anchors paint to steel. Prolongs original attractive finish.

Get new Modine Unit Heater Bulletin today! Also available — "How To Evaluate Unit Heater Performance Characteristics." Your Modine Representative listed in Classified section of phone book. Or write Modine Mfg. Co., 1510 Dekoven Ave., Racine, Wis.

Modine UNIT HEATERS U-103

(*Continued from page 188*)

a premium, the model has a cabinet 30 in. wide, 19 3/16 in. deep, and 87 1/2 in. high. Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.

NEW COLORS FOR SIDING

Asbestos-cement siding is being offered in three new colors in both *Colonial* (wave line) and *Weatherboard* (straight edge) design.

Pastel green, pastel ivory and steel gray siding is now available in 12 in. by 24 in. panels. Stainless steel face nails are supplied. The Ruberoid Co., 200 Fifth Ave., New York 18, N. Y.

TUBING CLAMP

Complete flexibility of installation is said to be insured when the new *Unistrut* spring steel clamp is used in conjunction with slotted steel channels to rack tubing in sizes from 3/16 to 1 in. OD.

Spring steel clamps rack tubing in channel

Individual fastening of each tube, respacing, relocation, or removal are reported to be possible in a matter of seconds with the clamp, which is designed to allow contraction and expansion while holding tubing firmly in place.

Rack can be mounted or hung in any position, and where two pieces of channel are spot-welded back to back, tubing can be racked on both sides. Unistrut Products Co., 1013 West Washington St., Chicago, Ill.

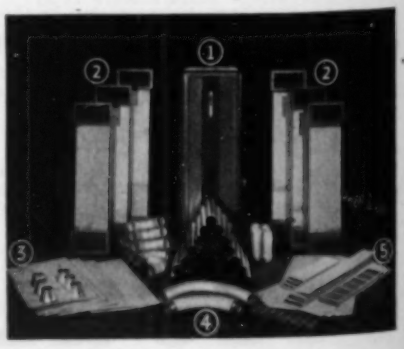
WARM AIR HEATING

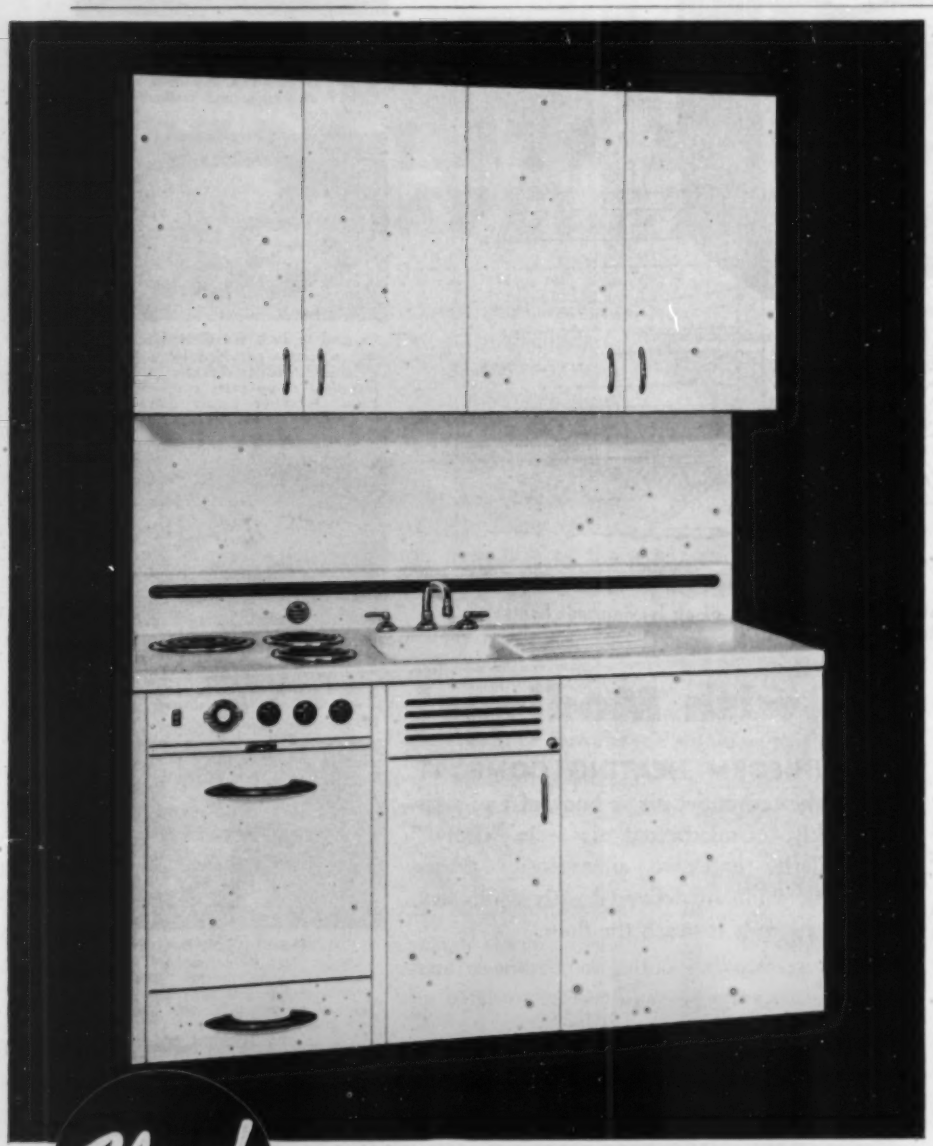
Blend-Air, automatic, warm air heating for homes has three basic parts; a streamlined, airtight furnace; a system of factory-made supply ducts only 3 1/2 in. in diameter; and a series of blending units in which heated air from the furnace is mixed with air taken from the room.

After being forced through the small ducts into the blender unit at temperatures up to 195 degrees F., the heated air passes through a nozzle, causing room air to be sucked through a grille into the blender, where heated air and room temperature air are thoroughly mixed.

(*Continued on page 192*)

Heating system for 5-rm. house: (1) oil-fired furnace (55,000 Btu output); (2) concealed-type air blenders; (3) bonnet assembly; (4) standard 3 1/2-in. ducts (pyramided), elbows and fittings; (5) return duct and grille, and accessories





New!

New . . .
larger refrigerator
with stainless steel
frozen food locker

MURPHY-CABRANETTE KITCHENS

Series 60—Model C

Never before has so much capacity . . . so much convenience . . . been offered in a 5-foot kitchen. No single facility has been featured . . . no requirement has been skimped. Cooking, refrigeration, storage and work space . . . all are ample and in balance. Minimum maintenance costs proven in more than 25 years of trouble-free operation in rental properties. Other models available 39 to 69 inches wide.

DWYER PRODUCTS CORPORATION
Dept. R9 — MICHIGAN CITY, INDIANA

MODERN DESIGN *plus* SOLID SECURITY

The new home of the First Security Bank, Ogden, Utah, is another example of how modern architectural design and Herring-Hall-Marvin equipment complement each other.

The massive stainless steel vault entrance, with its exclusive improved interlocking vestibule construction, and the double-nose lock safe deposit boxes, also in oil-free stainless steel, provide the solid security that today's bank architecture expresses.

If your plans call for a new vault or other new protective equipment, help yourself to our experience and engineering counsel in selecting and installing this equipment. No obligation.

WRITE TODAY for our newest booklet... "GUIDE FOR PLANNING MODERN BANK VAULTS."

HERRING·HALL·MARVIN SAFE CO.

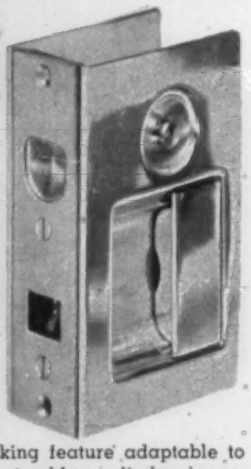
General Office & Factory HAMILTON, OHIO

BRANCHES in: New York, Chicago, Boston, Washington, St. Louis, Atlanta, Houston, Philadelphia, San Francisco, Los Angeles, Detroit, Pittsburgh, Omaha, Minneapolis,

OTHER AGENCIES ALL OVER THE WORLD.

QUALITY LOCKS from ADAMS-RITE

THE ORIGINAL RITE-LOCK® for SLIDING DOORS



Single assembly easily installed by simple cut-out, even in narrow stiles. No mortising. 3 types fit doors 1⅛"—1 15/16" thickness, with a ¾" wardrobe type. Latch and thumb button types with emergency unlocking feature adaptable to either hand. Pin tumbler cylinder in escutcheon is optional. Exterior parts solid brass. Escutcheons measure 4½" x 2⅞".

MINIMUM BACKSET DEADLOCKS FOR STANDARD CYLINDERS

Can Be Keyed to Any Job

For narrowest extruded aluminum, structural steel and wood stiles. Series 970 Deadlocks for standard cylinders have 13/16" backset, 1 7/16" depth. Fifteen other standard backsets to 1¾". Series 980 identical except for ¾" dia. pin tumbler cylinder and 15/16" backset. Rugged steel and brass construction, armored bolt with ⅝" throw, bronze or aluminum face and strike. Radius, flat and bevelled faces interchangeable.

TEMPERED GLASS DOOR DEADLOCK

Takes the place of 2 locks. Has single or double bolts and 1 or 2 cylinders. Handle operates bolts in sequence, cylinder locks handle. Designed for and can be installed in any tempered glass door top or bottom channel. 4 sizes: 1-15/16" High x 1-13/32" Wide.

CYLINDER SLIDING DOOR LOCK

Operates by cylinder from one or both sides. Fits all standard cylinders with adapter cams furnished, (specify when using Yale). Solid bronze face, strike & bolt. Heat treated aluminum alloy case. Use your own cylinders and trim. Also used as jimmy-proof lock.

Also—Adams-Rite Solid Brass Sliding Door Flush and Edge Pulls, Surface and Jam Bolts and Ball Latches

ADAMS-RITE®
MANUFACTURING COMPANY
540 W. Chevy Chase Dr., Glendale 4, Calif.

(*Continued from page 190*)

When it enters the room by means of a grille at the opposite end of the mixing chamber, the blended air has a temperature of 135 degrees F. and a velocity of 300 ft. per min. Each hot air run will deliver up to 10,000 Btu per hr.

Because the blender units recirculate air, only one short return duct to the furnace is normally required.

Simplicity of installation of the completely pre-engineered heating system is reported to be one of the most appealing features of Blend-Air.

The ducts come in convenient lengths and fasten together with simple clamps. Pre-engineered ells and flexible metal tubing take the runs around corners and construction obstacles. Return ducts and the furnace plenum chamber are packed in flat cartons for quick assembly on the site. There are special take-off fittings to speed up attachment of supply ducts to plenum chamber.

The three types of blender units available include a telescoping model designed for new house construction which fits between the studs of wall so that when the wall is finished only the two grilles are visible. Compressed, the unit is 48 in. high; it may be extended to 86 in. Another unit, 28 in. high, can be recessed in a wall; and a third, designed for use in existing houses, has an all-metal cabinet 32 in. high, which sets against the wall with no cutting required.

The entire system is operated by automatic room temperature controls which are said to be sensitive to a change of only 2F. The Coleman Co., Inc., Wichita 1, Kans.

DDT IN PAINT

Two interior paints are reported to have superior insecticidal properties through the incorporation of DDT.

The flat paint and the gloss enamel now available will soon be followed by a semi-gloss enamel, according to the manufacturer, who stresses that these paints are formulated for durability, serviceability and ease of application as well as for maximum toxicity to insects.

Films continue to be toxic even after washing with soap and water; and their long toxic life is said to be insured because the DDT crystals migrate very slowly and uniformly to the surface, and are anchored there. Sunoco Products Co., Hartsville, S. C.

GET Lowest Power Costs!! INSIST ON TODD BURNERS -GAS OR OIL

Whether you burn gas, oil or a combination, you'll be amazed how Todd Burners cut your fuel and maintenance costs . . . give you savings up to 10%, increased power capacity. For utmost economy in your boiler plant—let skilled Todd specialists, backed by 35 years of Todd experience, engineer your replacement of obsolete equipment or new installations.

Oil Burners
Gas Burners
Combination Oil and Gas Burners

COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION
81-16 45th Ave., Elmhurst, Queens, N. Y.

NEW YORK • BROOKLYN • ROCHESTER
BUFFALO • HOBOKEN • NEWARK • PHILADELPHIA
HARRISBURG • YORK • PITTSBURGH • CHICAGO
RALEIGH • CHARLESTON, S. C. • BOSTON • SPRINGFIELD, MASS. • BALTIMORE • WASHINGTON
RICHMOND, VA. • ATLANTA • BIRMINGHAM
DETROIT • GRAND RAPIDS • TAMPA • GALVESTON
SAN ANTONIO • DALLAS • HOUSTON • TULSA
MOBILE • NEW ORLEANS • SHREVEPORT
DENVER • SALT LAKE CITY • LOS ANGELES • SAN FRANCISCO • SEATTLE • MONTREAL • TORONTO
BARRANQUILLA • BUENOS AIRES • LONDON

WORTHINGTON AIR CONDITIONING REPORT

WORTHINGTON PUMP AND MACHINERY CORPORATION
HARRISON, NEW JERSEY

Specialists in air conditioning and refrigeration for more than 50 years

New Weather-Making Plant Has Finger-Tip Control

Thermostats Each 14 Feet, Four Fan Rooms On Each Floor, Assure Flexibility

A weather factory huge enough to turn out a ton of ice every day for every office in the new General Petroleum building, but sensitive enough to supply a different temperature every fourteen feet throughout the entire half-million square foot structure . . . that's the heating and air conditioning plant in General Petroleum Corp.'s new building in Los Angeles.

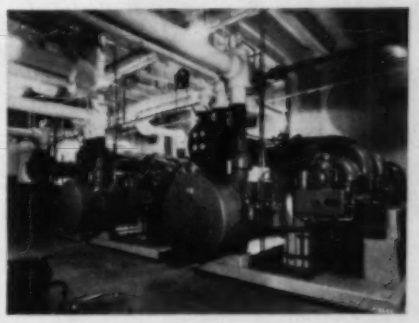
Basic approach in design of the equipment, which was done by the office of Ralph E. Phillips, consulting mechanical and electrical engineers, was determined by Southern California weather which may require the building to be heated and cooled simultaneously. One duct brings cooled air and the other heated air to all portions of the building.

The outlets are spaced to fit the modular design of the building which is on a 14 and 7 foot plan. Outlets are located each 14 feet on most floors; a few floors, where smaller offices

may be used, have outlets every 7 feet.

Each outlet has its own thermostatic control—more than a thousand controls altogether. Since most offices are 14 feet in width, that means each office can choose its own weather.

The controls operate dampers



which automatically mix the hot and cold air to provide the desired temperature. A minimum of six and an average of eight complete air changes hourly are provided.

Feeding the air to the twin-duct system are 48 fan rooms. Four are located on each floor from the second to the top floor of the 13-story building. Each fan room contains heating and cooling coils and a 3 horsepower electrically driven fan flowing 7500 cfm.

The refrigeration plant consists of three Worthington 300-hp centrifugal compressors, using "Freon 11", with a capacity of 333 tons each. Chilled water from the refrigeration plant is circulated to the cooling coils in the fan rooms, from where the cooled and conditioned air is distributed throughout the building. Cooling towers are located on the roof.

W. S. Kilpatrick & Company, Los Angeles, contractors. Wurdeman & Becket, Los Angeles, Architects.

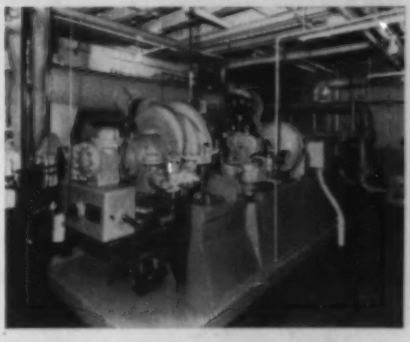
Hot News Gets Cooled Off

The Nashville Tennesseean and the Nashville Banner are published in Newspaper Printing Corp.'s air conditioned building.

The entire building, with the exception of the press room with its large printing roll presses, is air conditioned with Worthington equipment. Executive offices have individual temperature control. Multiple zone control for the building is provided by using face and by-pass dampers plus hot water reheat.

Air conditioning is provided by a Worthington centrifugal refrigeration system with a 150 ton refrigeration capacity. Chilled water is distributed to nine AVY and AHY type central plant air conditioning units which have chilled water cooling coils. A Worthington chilled water pump and two tower pumps complete the equipment for the system

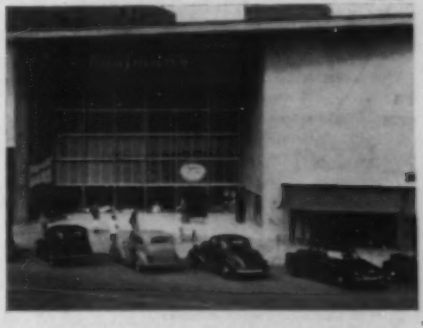
Architects and Engineers: Marr & Holman, Nashville. Contractors: J. M. Gallagher Co., Nashville.



Looks . . . and Feels Different

The Kaufman Department Store in Colorado Springs, Colorado, starts its 54th year in business with a new look and a different climate. All three floors of the store are air conditioned with Worthington equipment, which includes a 6HF4 Freon-12 condensing unit and a 4HF4 Freon-12 condensing unit. The latter controls temperature of basement and first floor, the 6HF4 unit controls second floor. Zone control is used by both. Consulting engineer: Douglas Jardine, Colorado Springs, Colorado.

A9-21



WORTHINGTON

AIR CONDITIONING AND REFRIGERATION

A complete line . . . in which *all* the vital components are *made*, not just assembled by Worthington. For more worth with Worthington, see your nearby Worthington distributor (consult Classified Telephone Directory).

ONLY Sani-Dri ELECTRIC HAND, FACE AND HAIR DRYERS

Give you Both!

1 MODERN, SANITARY WASHROOMS WITH NO TOWEL COST

Why put up with littered washrooms? Modern washrooms today are equipped with the new, faster-drying Sani-Dri that drys with a stream of hot air. No buying or stocking of towels. No unsanitary litter or waste containers . . . no fire hazard . . . no paper-clogged soil pipes . . . no servicing of empty towel cabinets. Instead, Sani-Dri provides cleaner, more sanitary washrooms with *automatic 24-hour drying service!*

SAVES 85% OF WASHROOM COSTS

Compare Sani-Dri with towel costs and maintenance. Discover this modern drying method that saves time, trouble . . . and money! Write for literature on Sani-Dri wall models for new installations—pedestal models for modernizing without structural changes . . . and Sani-Dri Electric Hair Dryers!

2 PROVEN DEPENDABILITY OF OVER 22 YEARS' USE!

Many Sani-Driers installed 15, 20 . . . even 22 years ago, are still giving efficient drying service. They are being used in every civilized country in every climatic condition. Sani-Driers have carried the Underwriter's Seal of Approval for over 18 years!

THE CHICAGO HARDWARE FOUNDRY CO.
Dependable Since 1897"
Commonwealth Ave., North Chicago, Ill.
Distributors in Principal Cities

SEND FOR LITERATURE ON New FASTER-DRYING Sani-Dri

The Chicago Hardware Foundry Co.
8949 Commonwealth Avenue
North Chicago, Illinois

GENTLEMEN: Please send literature:
☐ Brochure 1082 on new, faster-drying Sani-Dri Electric Hand, Face and Hair Dryers.

NAME_____
ADDRESS_____
CITY_____ STATE_____

(*Continued from page 156*)

components are described, and roughing-in dimensions and diagrams illustrate compact size. 4 pp., illus. Bradley Washfountain Co., 2203 W. Michigan St., Milwaukee 1, Wis.

Cement

North American Anti-Bacterial Cement. Folder describes a sanitary cement designed to provide a concrete that kills bacteria and fungi on contact. Discusses laboratory and practical tests. 4 pp. North American Cement Corp., 41 E. 42nd St., New York 17, N. Y.*

Aluminum Pipe Structures

Nu-Rail Slip-on Fittings With Reynolds Lifetime Aluminum Pipe. Brochure describes three fittings which provide 14 basic arrangements applicable in the construction of hand rails, scaffolds, stair rails, car ports, work benches, turnstile enclosures, etc., with lightweight aluminum pipe. Tells how pipe threading and welding are eliminated, said to cut installation time up to 80 per cent. Table of engineering specifications lists various weights and sizes of fittings available. 4 pp., illus. Reynolds Metals Co., 2500 S. 3rd St., Louisville, Ky.*

Elevators

Elevator & Dumbwaiter Planning. Technical information to help architects and engineers in the selection, planning and specification of elevator and dumbwaiter equipment for various types of buildings. Contains standard specifications and layouts prepared by National Elevator Mfg. Industry, Inc. 58 pp., illus. The Shepard Elevator Co., Cincinnati 14, Ohio.

Wood Preservatives

How to Protect Wood Chemically. Folder on line of chemical wood preservatives including the pentacholrophenol types and water-repellent preservatives. Chapman Chemical Co., 770 Dermon Bldg., Memphis 3, Tenn.

School Buildings

Build Your New School Now. Shows how standardized, rigid-frame structures can be used to advantage for schools by cutting costs and yet retaining flexibility. Contains drawings and floor plans of six suggested schools using Luria

(*Continued on page 196*)

Standards of Living

Architecture has always reflected the standard of living of its period. Today, aided by the many technical advances at our command, it is more than ever possible to raise those standards when planning living space for today's Americans.

However, for the millions who are destined to live in the low-cost housing now being planned, some long established standards are being lowered.

The standard appearance of a well plastered wall cannot be matched by means of rough carpentry. When wallboard is nailed directly to the rough framing, the resulting wall surface is no more true and even than any job of rough carpentry can be.

The standard of sound construction provided by interior plastering cannot be matched by any piece-by-piece wallboard application. Plastering makes ceilings and walls into one monolithic structure, truly constructed with the building.

For buildings large and small, finishing lime from Northwestern Ohio has long been the accepted standard. Our twin brands: Ohio White Finish and Hawk Spread, scientifically processed from hand picked, kiln burned rock, are always of uniform good quality, 99½% pure. Easily identified by their zigzag bags, they should have your wholehearted approval. There is none better.

The OHIO HYDRATE & SUPPLY Co.
WOODVILLE, OHIO

LOOK FOR THE ZIGZAG BAGS

FOR THE PRACTICAL SPANNING OF UNOBSTRUCTED AREAS

MACOMBER LONGSPANS

Macomber Longspans are engineered to A. I. S. C. specifications, standardized and manufactured under production methods developed through many years of experience.

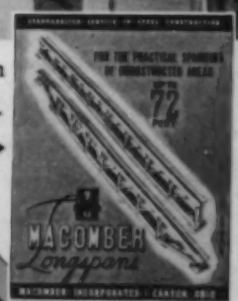
From the buyer's standpoint this means that structural units of this type can be delivered faster and more economically than individually designed load bearing members.

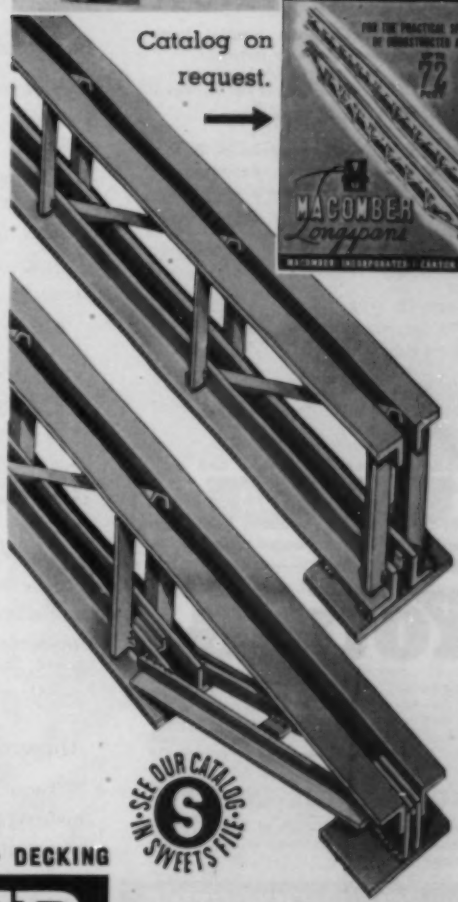
You have a catalogued item in wide use that will function exactly as you have a right to expect in the steel framing of wide unobstructed areas.

You have a national dealer organization thoroughly experienced in the proper use of these units to most economically serve your purpose.

These advantages are yours when you have a recreation center, super market or store of any kind, educational or industrial structure to design. Also check Macomber on associated building products—Bar Joists, Roof Trusses, Steel Roof Decking and Siding.

Catalog on request.





SEE OUR CATALOG IN SWEET'S FILE

V-BAR JOISTS AND PURLINS • V-STUDS • TRUSSES • LONGSPANS • DECKING

MACOMBER
INCORPORATED
CANTON, OHIO

IN CANADA, SARNIA BRIDGE CO., LIMITED, SARNIA, ONT.
IN MEXICO D. F.—MACOMBER DE MEXICO S. A. CEDRO 500

STANDARDIZED STEEL BUILDING PRODUCTS

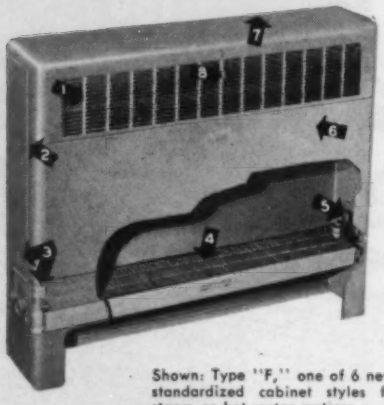
★ MACOMBER LONGSPANS
(To 72 Foot Spans).
Made in parallel or sloping chord designs for level or drainage conditions.

YOUNG

PRESENTS THE NEWEST

CONVECTOR-RADIATOR

ON THE MARKET



Shown: Type "F," one of 6 new, standardized cabinet styles for steam or hot water systems.

NEW YOUNG LINE OFFERS

8 IMPORTANT FEATURES

1. OVER-SIZE GRILLE gives greater heat delivery; louvers direct air outward.
2. EASY-TO-CLEAN CABINETS feature easy-to-remove front panels.
3. SIMPLIFIED PIPING possible with top and bottom header connections and generous cabinet knock-outs.
4. SENSITIVE HEATING ELEMENT of efficient, non-ferrous, tube-and-fin design, means quicker response to controls.
5. IMPROVED HEATING ELEMENT SUPPORTS permit quick installations and pitching adjustments.
6. MODERN CABINETS may be painted any color; corners are rounded, edges flanged for safety.
7. AIR-SEAL prevents air leaks and wall streaking.
8. DAMPER CONTROL regulates heat flow; permits individual room temperature control.

YOUNG

Heat Transfer Products for Automotive and Industrial Applications.

Young Quality

Heating, Cooling, and Air Conditioning Products for Home and Industry.

T. M. REG. U. S. PAT. OFF.

YOUNG RADIATOR COMPANY

Dept. 519-J Racine, Wis. Plants at Racine, Wis., and Mattoon, Ill. Sales and Engineering Offices in All Principal Cities.

WHEN YOU SPECIFY YOUNG YOU'RE USING THE LATEST

Rush me full details on your new Convector-Radiator Line!

Name_____

Address_____

City_____

Zone_____ State_____

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 194*)

Standardized Buildings, in both traditional and modern styles. The standard units and optional features available are described. 8 pp., illus. Luria Engr. Corp., Dept. J-10, 500 5th Ave., New York 18, N. Y.

Dry Wall Construction

Laminated Sheetrock Wallboard, A Double Wall System. Introduces a new system in dry wall construction, job-laminated *Sheetrock* wallboard. The first layer is applied conventionally and then the second layer is secured to the first by a special adhesive. Illustrates step-by-step application procedure. Layout patterns are given for application of the Sheetrock layers to walls and ceilings of various dimensions. 12 pp., illus. United States Gypsum, 300 W. Adams St., Chicago 6, Ill.*

Outdoor Fireplaces

How to Enjoy an Outdoor Cook Nook. Contains detailed drawings of eleven outdoor fireplace designs, instructions and construction tips for building fireplaces of any style and size. References to commercially available metal parts accompany the fireplace designs. Accessories are described. 52 pp., illus. The Majestic Co., Huntington, Ind. 25 cents.*

Welding

Standard Welding Terms and Their Definitions. Contains standard nomenclature and definitions for terms relating to new welding developments and revised terminology for older welding processes. Included are 57 illustrations on different types of welds and welding methods. 50 pp., illus. American Welding Society, 33 W. 39th St., New York 18, N. Y. $1.00.

Masonry

Tennessee Quartzite. Folder covering history, description and applications of Quartzite, said to be harder than granite and unusually smooth for stone. Results of laboratory tests are reported. 4 pp., illus. Tennessee Stone Co., Inc., 200 Flatirion Bldg., Knoxville 17, Tenn.*

Carpet

C Stands for Custom-Woven, Custom-Dyed Carpets. Actual installation photographs of made-to-order rugs in stores,

(*Continued on page 198*)

GLOBE

BRIDGE

LIFTS

GLOBE ENGINEERED EQUIPMENT

In spite of trackage, you can LEVEL the flow of goods from dock to dock for your clients.

When railway cars move between docks, this Globe Bridge Lift simply lowers to track level. At press of control switch it raises to dock level for short-cut cross movement of trucks, etc. Handles up to 20,000 lbs. Can be built wide enough for two-way traffic. Write for full details.

Globe's Lifting Engineers will gladly supply estimates or suggestions for all industrial lift problems, without obligation. Write now for Bulletin A949 showing illustrations and specifications on . . .

LOADING RAMPS

LOADING LIFTS

PRODUCTION LIFTS

SIDEWALK LIFTS

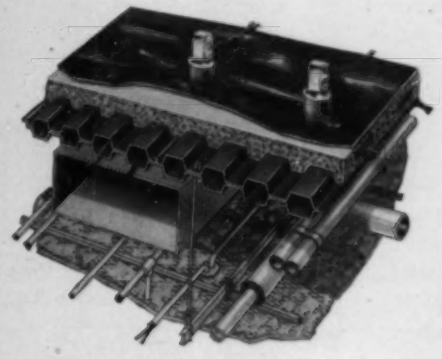
INDUSTRIAL TRUCK SERVICE LIFTS

ELEVATORS

Globe Hoist Company

DES MOINES 6, IOWA PHILADELPHIA 18, PA.

All these New Stores were built with Q-FLOORS



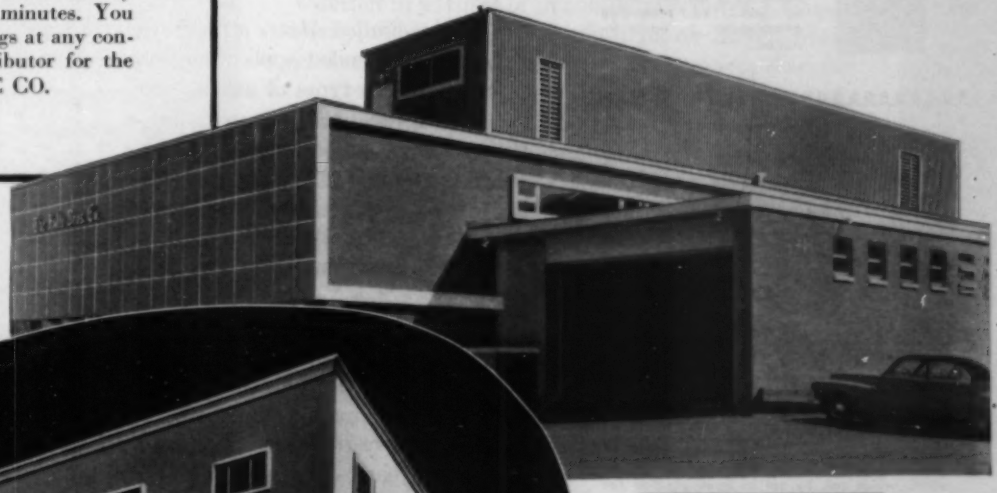
Steel Q-FLOOR is shown here with suspended ceiling and a condensed presentation of mechanical equipment needed in a modern building. The steel cells are crossed by a raceway which carries wires for all electrical systems so that an outlet can be located on any six-inch area, in a few minutes. You may see Q-FLOOR fittings at any construction materials distributor for the GENERAL ELECTRIC CO.

Because their owners wanted: (1) Quick, dry, clean, noncombustible, quiet construction of Robertson steel Q-Floors . . . and (2) the savings they get when Q-Floors with structural steel frame permit occupancy 15 to 20% sooner . . . and (3) the extra revenue resulting from this earlier completion date . . . and (4) electrical availability which Q-Floor construction provides over entire floor.

Selling floors and nonselling floors can be switched overnight because an electrician drills only a small hole to establish an electrical outlet on any six-inch area of entire exposed floor. With no trenches to dig, the whole job is over in a matter of minutes.

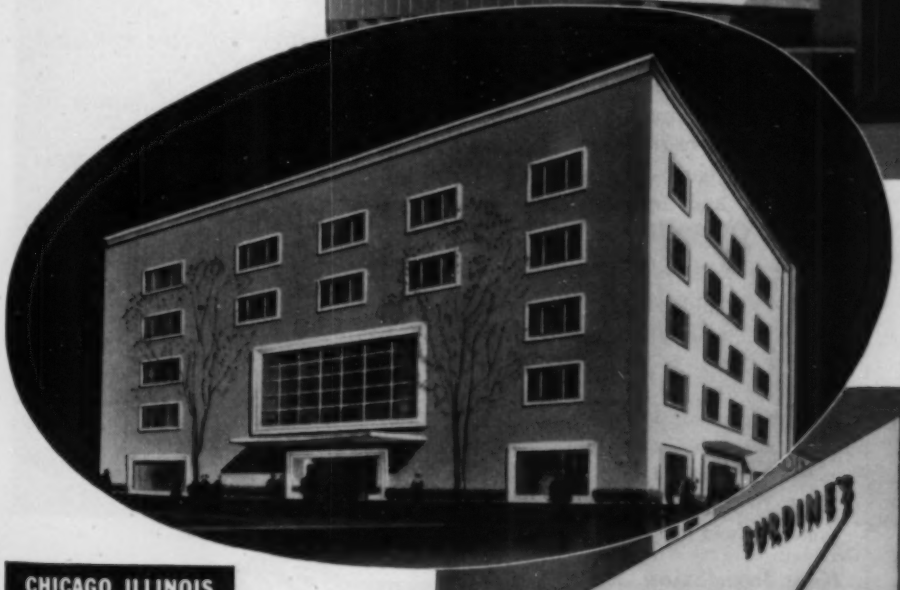
The cost of electrical alterations is almost eliminated. And no matter how many new merchandising devices, such as television, come into retailing, these stores always will be electrically ready.

Find out how these other store owners cut their building costs and still got better merchandising facilities. Write for free Q-Floor catalog. Address H. H. Robertson Co., 2404 Farmers Bank Building, Pittsburgh 22, Pennsylvania.



CLEVELAND, OHIO

Halle Bros. Co.
architects—Conrad, Hays, Simpson & Ruth
contractor—Cleveland Construction Co.



CHICAGO, ILLINOIS

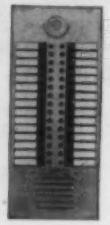
Bonwit-Teller Dept. Store
architects—Shaw, Metz & Dolio
contractor—George A. Fuller Co.

FT. LAUDERDALE, FLA.

Burdine's Dept. Store
architects—Abbott & Merkt
contractor—Caldwell & Scott

. . . one of these Couch Systems will dove-tail with your specifications

When plans call for mail boxes and inter-suite 'phone systems, look to Couch for equipment to fill the bill. If you don't find the type you want illustrated below, a Couch representative will gladly assist you.



Vestibule Telephones

Type 74C—Cordless type illustrated is the most popular unit . . . no protruding attachments . . . easily installed.

Tilting Mailboxes

Type 73—Post Office approved mail boxes for use with Vestibule Telephone. Features include frame separate from boxes for easy installation and tenant doors which can be set in open position for easy removal of mail.

Suite Telephones

Type 47—Cordless suite phones make a neat installation and can be provided to give a variety of service. Type 52, with the handset type instrument, provides greater convenience for particular installations.

S. H. COUCH CO., INC.

DEPT. 309A NO. QUINCY 71, MASS.

Private Telephones for Home and Office . . . Hospital Signaling Systems . . . Apartment House Telephones and Mailboxes . . . Fire Alarm Systems for Industrial Plants and Public Buildings.

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 196*)

showrooms, banks, hotels, etc. Shows carpet being made and lists services provided by the manufacturer. 8 pp., illus. Rugcrofters, Inc., 143 Madison Ave., New York 16, N. Y.

Drainage

Josam Backwater Sewer Valves. Folder on equipment designed to afford protection against backwater from excessive rain, flood conditions and inadequate sewer carry-off. Detail drawings and dimensions as well as diagrams of many sizes and types are included. Floor drains to be combined with the backwater valves are also shown. 4 pp., illus., Josam Mfg. Co., Dept. AR-2, Josam Bldg., 1302 Ontario St., Cleveland 13, Ohio.*

Asphalt Roofing

Good Application Makes a Good Roof Better. Recommended application practices for various types of asphalt roofing. Includes sections on importance of proper application, key points in roofing selection and application, preparation of roof decks, specific instructions for laying both shingles and roll roofing. 24 pp. Asphalt Roofing Industry Bureau, 2 W. 45th St., New York 19, N. Y.

Insulation

Gold Bond Insulation Boards Square Footage Chart. Provides information for determining coverage provided by insulation board panels, tiles, planks, sheathing, lath and handiboard. National Gypsum Co., Buffalo 2, N. Y.*

Rock Cork Insulation. Essential data on size, temperature limits, conductivity and moisture absorption of Rock-Cork mineral insulation used for refrigeration service in food and beverage industries. Included are suggested applications for Rock Cork which comes in sheets, pipe insulation and lagging. 4 pp., illus. Johns-Manville, 22 E. 40th St., New York 16, N. Y.*

Heat Insulation

85% Magnesia Insulation Manual. Discusses application and finishing procedures, determination of correct thicknesses and maintenance for magnesia insulation used on pipes, ducts, etc. The appendix contains a discussion of practical applications of heat transmission theory, definitions of technical

(*Continued on page 200*)

ONE STEP in the right direction and you're in comfortable, cheerful

HOTEL CLEVELAND.

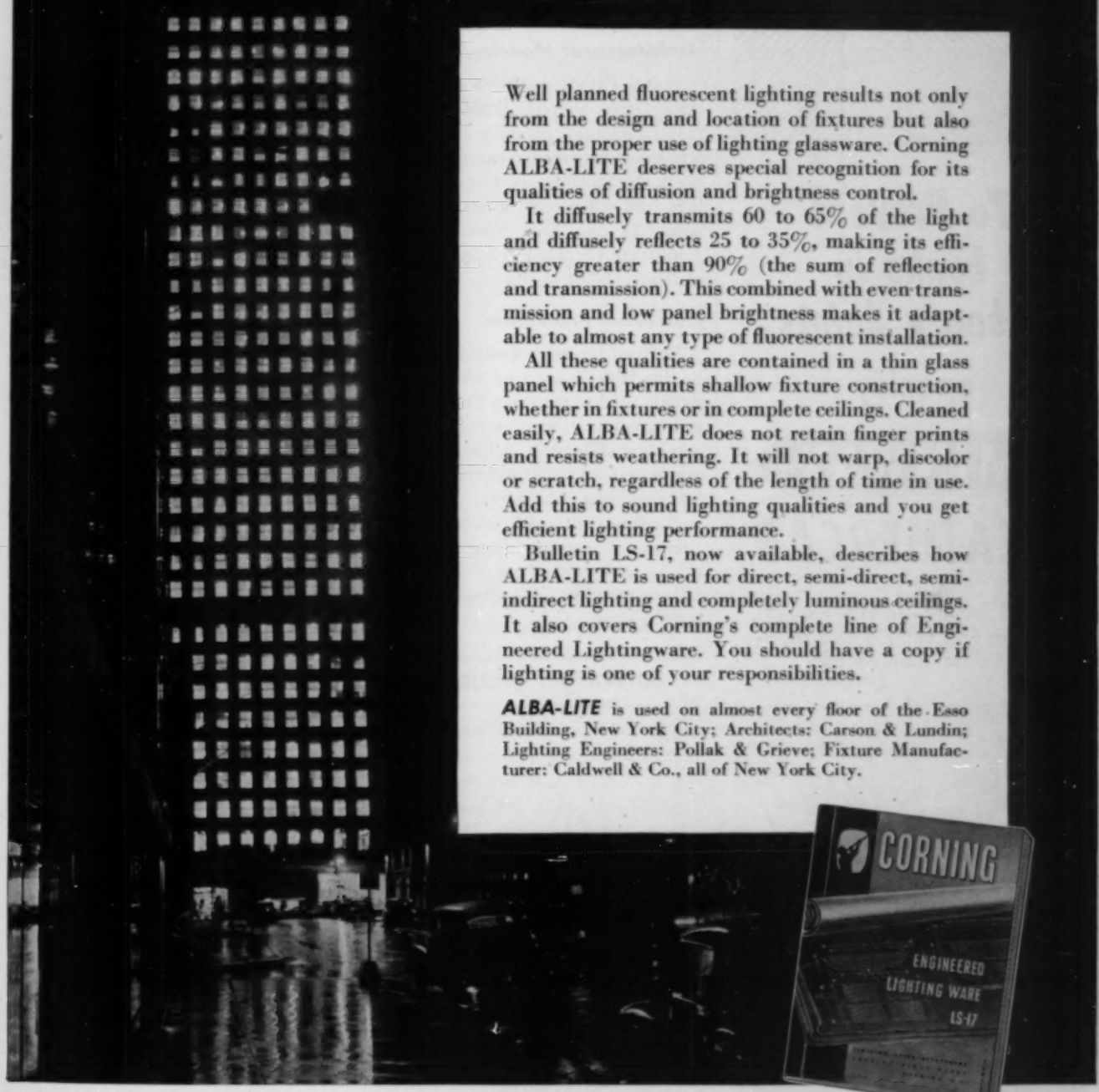
Convenient to stores, Public Auditorium, Stadium, theatres. Directly connected by covered passage to Union Passenger Terminal, garage, Terminal office buildings.

Best choice of rooms Thursday through Monday. All rooms with radio... many with television.

Hotel Cleveland

CLEVELAND, OHIO

WHY A WELL PLANNED LIGHTING INSTALLATION NEEDS CORNING ALBA-LITE



Well planned fluorescent lighting results not only from the design and location of fixtures but also from the proper use of lighting glassware. Corning ALBA-LITE deserves special recognition for its qualities of diffusion and brightness control.

It diffusely transmits 60 to 65% of the light and diffusely reflects 25 to 35%, making its efficiency greater than 90% (the sum of reflection and transmission). This combined with even transmission and low panel brightness makes it adaptable to almost any type of fluorescent installation.

All these qualities are contained in a thin glass panel which permits shallow fixture construction, whether in fixtures or in complete ceilings. Cleaned easily, ALBA-LITE does not retain finger prints and resists weathering. It will not warp, discolor or scratch, regardless of the length of time in use. Add this to sound lighting qualities and you get efficient lighting performance.

Bulletin LS-17, now available, describes how ALBA-LITE is used for direct, semi-direct, semi-indirect lighting and completely luminous ceilings. It also covers Corning's complete line of Engineered Lightingware. You should have a copy if lighting is one of your responsibilities.

ALBA-LITE is used on almost every floor of the Esso Building, New York City; Architects: Carson & Lundin; Lighting Engineers: Pollak & Grieve; Fixture Manufacturer: Caldwell & Co., all of New York City.

CORNING means research in GLASS

PYREX T.M. REG. U.S. PAT. OFF.

CORNING GLASS WORKS, DEPT. AR9, CORNING, N. Y.

Please send me your Data Book LS-17, "Corning Engineered Lightingware," describing MONA-LITE, ALBA-LITE and other Corning products.

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____